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WAR DEPARTMENT

MEDICAL FIELD MANUAL

MEDICAL SERVICE OF
THE DIVISION

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FM 8-10

MEDICAL FIELD MANUAL



MEDICAL SERVICE OF THE DIVISION

Prepared under the direction of
The Surgeon General



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WAR DEPARTMENT,
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BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

E. S. ADAMS,
Major General,
The Adjutant General.

II

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MEDICAL FIELD MANUAL

MEDICAL SERVICE OF THE DIVISION

CHAPTER 1

GENERAL

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SECTION I

GENERAL CHARACTERISTICS OF MEDICAL SERVICE

■ 1. STATUS OF MEDICAL DEPARTMENT.—*a.* The Medical Department is one of the services of the Army. It has the general functions of administration, supply, evacuation, and hospitalization.

b. The Medical Department includes the Medical Corps, the Dental Corps, the Veterinary Corps, the Medical Administrative Corps (and, in time of war, the Sanitary Corps), the Army Nurse Corps, enlisted men of the Medical Department, and civilian employees.

c. For further details, see FM 100-10, AR 40-5, and AR 700-10.

■ 2. GENERAL MISSION.—*a. Medical.*—The general mission of the medical service is to contribute to the success of military operations by application of technical knowledge to two major military problems:

(1) *Conservation of mobilized manpower.*—Military manpower is conserved by the physical selection of personnel to insure that only the relatively fit take the field; by the protection of troops against preventable hazards to health and fitness; and by the prompt and effective care of the sick and injured so that casualties may be converted promptly into replacements.

(2) *Prevention of adverse effects of unevacuated casualties upon combat efficiency.*—The accumulation of casualties within any combat unit restricts its movements; and lack of proper facilities for the care of the wounded has always exerted a serious depressing effect upon soldiers. These adverse influences can be prevented only by the prompt and orderly evacuation of casualties from forward areas in a manner calculated least to interfere with other military requirements and most to promote the morale and courage of remaining effectives.

b. Dental.—Dental service is an integral element of medical service. It contributes to the conservation of mobilized manpower by the prevention of dento-oral disease, and by the treatment or correction of such disease, injury, abnormality, or deficiency. In combat it assists in first aid, evacuation, and other general functions of the medical service.

c. Veterinary.—The mission of the veterinary service is the conservation of the animals of the Army, and of mobilized manpower insofar as it is influenced by the quality and sanitary condition of foods of animal origin.

■ 3. GENERAL RESPONSIBILITIES.—The general responsibilities of the medical service are—

a. The evacuation, care, and treatment of sick and injured men and animals in all situations.

b. The initiation of measures to insure the health of troops and animals.

c. The supervision of all public health measures in occupied territory and among prisoners of war or other persons who may constitute a potential danger to the health of troops or animals.

d. The procurement, storage, and distribution of medical supplies.

e. The preparation, classification, and preservation of records of sickness and injury for the information of higher authority, for use in future planning, and to assist in the adjudication of claims for disability, with justice both to the Government and to the individual.

f. The training of all Medical Department personnel and supervision of the training of all personnel in hygiene and first aid.

g. The submission of timely information and feasible recommendations to the proper authority upon all matters within the scope of medical service.

■ 4. ADMINISTRATION.—See FM 101-5.

a. *General*.—All functions of medical service which are associated in any way with command responsibility are administered through command channels. Other functions are administered through Medical Department channels.

b. *Distribution of medical service*.—(1) *Attached medical personnel*.—(a) Medical personnel are attached by Tables of Organization to each unit of an arm or a service, except medical, larger than a battalion, and to separate battalions and other units of comparable size. In special cases they may be attached temporarily to units smaller than a battalion.

(b) Veterinary personnel are attached to units whose animal strength is sufficient to justify their employment.

(2) *Medical units*.—All tactical units of combined arms and services include units of Medical Department troops, such as medical regiments or battalions, surgical and evacuation hospitals, medical depots, and veterinary companies and hospitals. Territorial commands may include any of the foregoing and, in addition, such other Medical Department units as hospital trains and ships, and fixed hospitals, both medical and veterinary.

(3) *Exempted Medical Department activities*.—In addition to the Medical Department activities in tactical and territorial commands, there are certain others that are exempted from such jurisdiction and that function directly under the control of The Surgeon General. This class of medical units and installations comprises general hospitals in the zone of the interior, special service schools of the Medical Department, and other similar activities of a technical character that may be specifically designated by the War Department.

c. Medical command.—(1) An officer of the Medical Corps is provided on the staff of every unit to which medical troops are attached, of every unit of combined arms and services, and of every territorial command. This officer, the unit or area surgeon as the case may be, commands all Medical Department troops not assigned or attached to subordinate units of the command. He is responsible to his commander for initiating and recommending the necessary measures for the proper medical, dental, and veterinary service of the command, and for carrying out these measures in accordance with the decisions of the commander.

(2) Surgeons of commands are designated generically as the "surgeon," and specifically by the designation of the command to which each pertains; *e. g.*, the surgeon, communications zone; the surgeon, Second Army; the surgeon, 5th Division; the surgeon, 9th Field Artillery. When provided as assistants to the surgeon, the dental officer and veterinary officer so provided are known as the dental surgeon, and the veterinarian, respectively, of the command.

■ 5. SUPPLY.—*a. General.*—The Medical Department is charged by law and regulation with the procurement, storage, and issue of the items of special supply used in the care and treatment of the sick and injured, and of first aid packets, foot powder, and litters for the use of all troops. Items of general supply required by the Medical Department are furnished by the Quartermaster Corps; and all items of special supply, other than those procured by the Medical Department itself, are furnished by the supply arm or service concerned.

b. Property exchange.—In transferring a patient from one medical agency to another, there is frequently certain medical property that cannot be separated from him without causing suffering or injury, such as blankets, splints, tourniquets, and litters. To prevent rapid and unnecessary depletion of the equipment of the transferring agency, the receiving agency turns over at once to the transferring agency a like number of the same items of medical property that it received with the patient. This procedure is termed "property exchange" and is employed in all medical units from the battalion medical section to the general hospital.

■ 6. PREVENTION OF DISEASE AND INJURY.—*a.* The prevention of disease and injury is one of the most important functions of medical service. Every contact and activity of the soldier which may affect his physical fitness is a proper concern of the surgeon. The prevention of injury is as important as, and generally less difficult than, the prevention of disease.

b. Physical condition is a critical factor in the combat efficiency of troops. Military history offers numerous examples of battles that were lost and campaigns that failed solely because of sickness among the personnel. The physical strain in modern warfare has increased the importance of physical condition. Situations arise in every war in which the health of troops must be temporarily subordinated to military necessity; but consistent disregard of the health of troops will, as it always has in the past, lead to disaster.

c. The Medical Department investigates problems of military preventive medicine and gives special instruction in this field to its officers. However, because of the rights and responsibilities of command, the Medical Department cannot effect the necessary measures for prevention of disease and injury except within its own organizations. The responsibility of a unit surgeon extends only to keeping the unit commander fully informed of the sanitary situation with appropriate recommendations for the correction of any defects. For further details see FM 8-35.

■ 7. EVACUATION.—*a.* Evacuation is the process of moving casualties from one medical installation to another farther to the rear. The term "chain of evacuation" is applied to the entire group of successive agencies and installations engaged in the collection, transportation, and hospitalization of the sick and injured. The forward terminus of a chain of evacuation is usually at an aid station; and the rear terminus at a general hospital.

b. Of all the tasks of the Medical Department, the most difficult, and in combat the most important, is the evacuation of casualties. Commanders of all echelons must comprehend the magnitude and the importance of this function. The operation of evacuation of casualties is of the nature of a major withdrawal. In operations against strong re-

sistance as many as one-fifth of all troops engaged, and a much greater proportion of certain elements, may require evacuation within a relatively short period. Under the most favorable circumstances the numbers involved would make the task difficult; but the true proportions of the problem are revealed only by the other factors that must be combated in the operation. These are—

(1) The withdrawal must be made against a constant forward flow of troops and supplies, and interference must be kept to the minimum.

(2) Evacuees are unorganized, and they must be gathered as individuals from all units of the force. They are not self-supporting, but require individual care and treatment through all stages of their withdrawal. A large proportion are unable to walk and must be carried each time they are moved.

(3) In forward areas especially, evacuation must be carried on at times under the most trying conditions of weather, terrain, and combat. Conditions which seriously impede all movement may increase the numbers to be evacuated.

■ 8. HOSPITALIZATION.—*a.* Casualties require care and treatment from the time they are received by the Medical Department until their final disposition. Many measures applied as first aid are of value in definitive treatment; and it is impossible to fix a point where emergency treatment ends and curative treatment begins. However, somewhat arbitrarily the term “hospitalization” is restricted to care and treatment in those medical installations designed and equipped to undertake major procedures in the definitive treatment of the sick and injured.

b. Hospitals are classified as “fixed” and “mobile”. Fixed hospitals include general hospitals and station hospitals; and mobile hospitals comprise evacuation hospitals and surgical hospitals. However, regardless of its designation, a mobile hospital that cannot be evacuated of its patients becomes in effect a fixed hospital.

c. As soon as the medical service receives a sick or injured person who requires hospitalization, it is confronted with a choice between two alternatives. It must either move the patient to a hospital, or a hospital to the patient. Two fac-

tors govern the choice. First and most important is the military situation at the time, and second the condition of the patient.

(1) It is obviously impracticable to undertake definitive treatment of sick and injured in areas subjected to intense hostile action. Aside from the element of danger, minor fluctuations in battle lines would expose patients and personnel to capture. In combat, then, the patient, regardless of his condition, must be moved to the hospital.

(2) On the other hand, every casualty evacuated must be replaced; so the evacuation of one man requires movement of two. The administration and operation of the replacement system are burdensome at best; and every replacement spared lessens the overhead required for this service. Furthermore, a replacement is rarely as valuable immediately to an organization as the veteran whose place he took. If a casualty can be made ready within a few days to resume his place in his organization, it may be more economical to move the hospital to him than to move him to a hospital. To evacuate all casualties under all conditions so far to the rear that replacements must be furnished is both uneconomical and undesirable. So, when the military situation permits, patients that will be fit for full duty within a short time may be retained within the division in a clearing station established by a division medical unit normally engaged in evacuation. It must be remembered, however, that division medical units must never be allowed to become immobilized with patients. Their primary function is evacuation in combat; and they must be free to discharge this function whenever combat is imminent.

d. The objective of all hospitalization is to return a maximum number of casualties to full duty within a minimum time. Such individuals because of previous training and experience are the most valuable of all replacements. Agencies charged with procurement of personnel should regard the disposition wards of hospitals as a preferred source.

e. A certain proportion of casualties recovers without being fit for military duty. These must be classified, and such as are able returned to limited service. Those entirely unfit for further service are retained only until maximum improve-

ment has been reached when they are discharged from the service. The medical service of the Army cannot properly extend its facilities to individuals of no potential military usefulness; and, recognizing this, the Government has created other medical agencies to fulfill its obligations to the disabled.

■ 9. BASIC CONSIDERATIONS.—*a. Responsibility.*—Commanders are responsible for the medical service of their commands. Whether the command is large or small, and whether the exercise of the functions of command is complex or simple, the commander must be the controlling head. Decision as to a specific course of action in any given case is the responsibility of the commander alone. It is the task of the staff to furnish the commander with such information, data, and advice as he may require in reaching his decision. (See FM 100-5.) The authority to prescribe tasks for medical service involves a responsibility to provide adequate means for the accomplishment of those tasks. Like units in other arms and services, medical units are designed to carry usual or normal loads. In exceptional situations they require reinforcement.

b. Medical organization.—(1) Since the responsibility for medical service rests with unit commanders, medical organization must parallel tactical organization.

(2) The effectiveness of medical service frequently is a function of time rather than of thoroughness. Primitive measures, instituted early, often contribute more to the saving of life or limb than more elaborate measures after a delay. This requires that facilities for primary care and treatment be provided within small tactical units.

(3) Sick and injured are not cargo to which the ordinary rules of logistics can be applied. They are perishable; they must be prepared for evacuation; and they require constant care and treatment en route. To effect this a suitable installation to receive them must be located at each point in their journey from front to rear where either the character of the transport changes, or the responsibility for evacuation passes to another agency. Motor transport has altered the relationship between time and space; but the relationship between time and the ability of a sick or injured man to withstand transportation remains unchanged.

c. Medical plans and operations.—Decision is a function of command; but it is a staff function to elaborate the details necessary to carry the decision into effect. Medical service must be planned and operated in conformity with the specific plans and general policies of the commander; and medical plans must be coordinated with other parts of plans. This requires that the surgeon is kept informed of the plans and intentions of the commander. (See FM 100-5.)

d. Continuity of medical service.—Medical service must be continuous. When an organization is mobilized it requires a functioning medical service. Medical units in sufficient numbers must be given the highest priority in any mobilization or concentration. Sickness occurs during each hour of the day and night, regardless of the location or employment of troops. In combat, the necessity for organized evacuation arises the instant contact is gained. (See also par. 11*d* and *f*.)

e. Concept of patient.—The peculiar relationship between patient and physician that distinguishes the civil practice of medicine is incompatible with an efficient military medical service. In civil practice each patient is an entity, and all other considerations are subordinated to the alleviation of his individual disability. This concept of medical responsibility is obviously unsuited to the special conditions that obtain in war. Medical means, always limited, must be so distributed as to render the greatest service to the greatest number. The devotion of a disproportionate amount of time and effort to one casualty can only result in the neglect of many other casualties. The interests of the individual casualty must be subordinated to the interests of the mass of casualties. This is by no means to infer that military medical service should be disinterested or unfeeling. It is rather to insist that it can be really effective only when it is impartial and economical; and, until he fully accepts this point of view, the value of a medical officer is seriously impaired.

f. Sorting of casualties.—No patient must be permitted to proceed farther to the rear than his physical condition warrants, or the military situation demands. The sorting of the fit from the unfit is a most important function of every medical agency from the aid station to the general hospital.

Every case evacuated without sufficient reason imposes an unnecessary burden upon three agencies: his organization must go short-handed until he is replaced; the replacement system must procure, equip, train, and transport a man to take his place; and the medical service must provide an additional berth in ambulances and trains, an additional bed in a hospital, and additional personnel to care for him. The problem created by one such case is not impressive; but the multiplication of these cases by indifferent sorting of casualties will place a strain upon administrative agencies that may jeopardize the success of the operations. Unnecessary evacuation of patients is of the nature of subsidized straggling. The mere fact that an illness or injury exists is not enough to justify the evacuation of the case. The illness or injury either must be incapacitating in fact or of such character that serious consequences may follow if the soldier be returned immediately to full duty. This decision is often difficult when there is little time for observing the case, and the benefit of all reasonable doubt must be given the case. However, with proper attention paid to the sorting of casualties, the number of cases evacuated unnecessarily can be greatly reduced.

g. Abandonment of casualties.—Abandonment of living casualties to the enemy is always destructive of morale even when it is not inhumane. In warfare against uncivilized peoples it is not considered even in desperate situations; and this has often been a limiting factor in operations against barbarous tribes. In rapid retrograde movements it is frequently impossible to evacuate all casualties with the facilities at the disposal of the medical service. In such a situation one or a combination of only three courses of action are possible: the speed of the movement may be retarded to permit evacuation with the facilities at hand; the medical service may be reinforced; or the casualties may be abandoned to the enemy together with a detachment of medical troops sufficient for their care. This is a command decision. It is the duty of the surgeon to present to the commander the data necessary for him to arrive at his decision; but the commander alone must decide whether or not to abandon his casualties in whole or in part.

SECTION II

GENERAL TACTICAL CONSIDERATIONS

■ 10. COMMAND AND STAFF RELATIONS OF SURGEON.—*a. With commander.*—The commander is responsible for his medical service. The surgeon is the special staff officer charged with keeping the commander informed as to the conditions and capabilities of the medical service, and with elaborating the details necessary to carry the decision of the commander, as it affects medical matters, into effect. (See FM 100-5.) As in the case of any staff officer, the commander may utilize the services of the surgeon in a purely advisory capacity; or he may delegate to the surgeon authority to act in the commander's name, within established policies, in affairs that fall properly within the jurisdiction of the medical service. The general responsibilities of the surgeon to his commander are—

(1) To inform and advise the commander upon all matters that affect the health of the command and the care of the sick and injured. The commander is charged with having ever before him a conception of the physical state of his command. Of certain factors governing physical state the surgeon alone can inform him. (See FM 100-5.)

(2) To submit to the commander plans for the training and employment of medical units. Responsibility for the medical service includes the responsibility for its training. Every command that has a medical service comprises other subordinate elements. To act effectively a command must operate as a coordinated whole. The medical plan is a part of the general plan of a command, and must be fitted with the other subordinate plans. For this reason medical plans must be submitted for the approval of the commander. (See also par. 15.)

(3) To exercise supervision for the commander over the technical aspects of the training and operation of the medical services of subordinate elements. This is purely a staff function and does not encroach upon the prerogatives of subordinate commanders. It is the duty of the surgeon to follow up the execution of the instructions issued by the commander

which apply to any phase of medical service. He may call for such technical reports from surgeons of subordinate units as are necessary in supervising the execution of the work with which they are charged. (See FM 101-5.)

(4) When, in addition to his staff duties the surgeon commands a medical unit, his responsibilities to his commander are the same as those of any subordinate commander. (See FM 100-5.)

b. With general staff.—The diversified activities of the medical service require the surgeon to deal with all sections of the general staff or, in commands lacking one or more general staff sections, with the staff officers discharging such general staff functions. Insofar as the surgeon is concerned with any of the matters listed below, he deals with the general staff sections indicated.

(1) *G-1 or adjutant general's section, depending upon the type of division.*—(a) Sanitation; measures for the control of communicable diseases of men and animals.

(b) Medical problems associated with prisoners of war, refugees, and inhabitants of occupied territory.

(c) Personnel matters, and replacements for medical units.

(d) Reports of human casualties.

(e) Employment of prisoners of war to reinforce the medical service.

(2) *G-2 section.*—(a) Nature and characteristics of weapons, missiles, gases, and other casualty-producing agents employed by the enemy.

(b) The character of the organization and operation of the medical service of the enemy, especially as it relates to new methods which may deserve study and trial.

(c) Communicable diseases in enemy forces.

(d) Supply of maps.

(3) *G-3 section.*—(a) Current information of the tactical situation; future plans.

(b) Mobilization, assignment, and training of medical units; training of all personnel in military sanitation and first aid.

(c) Signal communications in medical installations.

(d) Troop movements affecting medical personnel.

(4) *G-4 section.*—(a) Tactical dispositions of medical units.

- (b) Supply matters, both general and medical.
- (c) Transportation of medical units.
- (d) Evacuation by higher echelons.
- (e) Reinforcement of the medical service by a higher echelon.
- (f) Hospitalization.
- (g) Shelter for medical troops and installations.
- (h) Coordination of nonmilitary welfare and relief agencies in medical installations.
- (i) Traffic control and restrictions affecting medical vehicles.
- (j) Reports of animal casualties.
- (k) Animal replacements for medical units.
- (l) All other matters which have not been specifically allotted to another general staff section, or wherein there is doubt as to which section has jurisdiction.

c. With special staff.—The expenditure of much time and energy may be spared the general staff by the close cooperation of the surgeon with other members of the special staff. In war, time is ordinarily too precious to be wasted in ponderous methods of formal staff procedure. Informal agreements among special staff officers, succinctly submitted for approval when necessary, promote efficiency as well as foster the friendly personal relations that are so essential to the smooth functioning of a staff. The more important contacts of the surgeon with other special staff officers will be in connection with—

- (1) *Engineer.*—(a) Water supplies; sewerage systems; electricity.
- (b) Road construction and maintenance in and around medical installations.
- (c) Construction, repair, and maintenance of roads and structures used by the medical service.
- (d) Preparation of signs.
- (e) Camouflage.
- (f) Maps.
- (2) *Quartermaster.*—(a) Disposition of the dead at medical installations; the sanitary aspect of the disposition of all dead.
- (b) Bathing, delousing, and laundry facilities for all troops.

(c) Clothing for gassed cases, and other patients returning to duty.

(d) General supply of medical units.

(e) Procurement of land and existing shelter for medical troops and installations.

(f) Procurement and operation of utilities allocated to the Quartermaster Corps. (See FM 100-10.)

(g) Transportation, land and water; motor and animal transport of medical units.

(3) *Chemical warfare officer*.—(a) Gas defense of medical troops and installations; gas masks for patients.

(b) Types of gas used and methods of identification.

(c) Toxicology and pathology of new gasses.

(4) *Adjutant general*.—(a) All official correspondence through command channels.

(b) Personnel matters.

(c) Postal service for medical units and installations.

(5) *Signal officer*.—Signal communication for medical installations.

(6) *Judge advocate*.—(a) Questions of military and civil law.

(b) Administration of justice in medical units.

(7) *Headquarters commandant and provost marshal*.—(a) Physical arrangements for the surgeon's office.

(b) Custody of sick and injured prisoners of war.

(c) Disposition of stragglers and malingerers in medical installations.

■ 11. GENERAL TACTICAL DOCTRINES OF MEDICAL SERVICE.—From the mission, characteristics, and responsibilities of the medical service flow certain doctrines governing the employment of medical units. The more important ones are stated below, not for the purpose of limiting the initiative of medical officers but to furnish guides for planning and operating a medical service. Situations will arise wherein the rigid application of one or more of these rules may be inexpedient. Officers and men of all grades are expected to exercise a certain independence in the execution of tasks assigned to them and to show initiative in meeting situations as they arise. However, the experience of the many battlefields in which

these doctrines were refined is too impressive to permit them to be dismissed lightly. (See FM 100-5.)

a. Medical service must be flexible. Allotment of medical means is based upon the military situation and the tactical plan obtaining at the time. Changes in the situation may require an immediate redistribution of medical means. An adequate reserve is the most positive assurance of flexibility. So long as the commander retains a reserve of combat elements, a commensurate reserve of medical means must be held to support them when they are committed. When his medical reserve has been exhausted, or depleted to the point of inadequacy, it is the first concern of the surgeon to reconstitute a suitable reserve from units already committed. If this be impossible, he must seek reinforcement. Mobility is another very important element in flexibility. (See b below.)

b. Mobile medical units must retain their mobility. The essence of medical support is in the maintenance of contact with combat elements. Medical units should retain complete mobility as long as possible by establishing their stations only partially until the demands of the situation require the commitment of their entire means. Once entirely committed, the only way the mobility of a medical unit can be preserved is by prompt evacuation. An immobilized medical unit can continue its support only in a static situation. In the advance it must be replaced with another unit. In a retrograde movement it must be abandoned.

c. The zone of responsibility for evacuation assigned to any medical unit lies to its front rather than to its rear. No echelon of medical service is given a responsibility for evacuation that extends farther than its rearmost medical installation. This is based upon two considerations:

(1) The commander being responsible for evacuation, his responsibility may not properly be extended farther than the rear boundary of his command.

(2) The usefulness of a medical unit ceases when it loses contact with the elements it is supporting. It is manifestly impossible under all circumstances for a unit to maintain contact in two opposite directions. Since contact with forward elements is essential to medical support, the responsibility for contact must be confined to that direction.

d. In combat the necessity for medical operations arises the minute contact is gained. Casualties begin to accumulate as soon as troops come under fire, and their care and prompt evacuation are as important then as it ever will be. Medical units should be disposed in marching columns in a manner that will facilitate their entry into action without delay; and the surgeon must keep abreast of tactical developments in order to be prepared to initiate combat medical service at once.

e. Preferential medical support is given to combat elements with decisive missions. This accords with the tactical procedure of placing the bulk of the means with the decisive effort; but there is another reason for such a distribution of medical means. The task of the medical service is greatly influenced by the frontages occupied by and movement under fire of combat troops. In general, the decisive effort is expected to make maximum progress. This usually requires a denser concentration of troops than on other parts of the front, and more movement under fire. These two factors will produce a greater proportion of casualties than will occur in other parts of the command. (See also par. 12.)

f. The operation of an essential medical installation should not be terminated until its functions have been assumed by another agency. Evacuation is a continuous function, and one that cannot be suspended while adjustments are being made. Nor can adjustments be made sharply. A reasonable time must elapse after the opening of the new installation before the old one is closed, in order that casualties already enroute to the old one may be received. The length of this time lag will depend upon the agencies to be advised of the change, and the length of time that it will require for them to divert their casualties to the new installation.

g. The support required by a forward medical unit is determined by the number of casualties and the rate at which they can be collected. Neither element is governing, and they must be considered together in a medical estimate of the situation and in the allotment of medical means. (See par. 14.)

h. Medical problems are highly correlated with tactical problems. The same hostile fire that stops combat troops re-

tards or prevents the movement of casualties. Terrain that is difficult for troops to traverse is even more difficult to move wounded over. Weather that embarrasses tactical operations usually increases the number of sick to be evacuated.

i. There is an optimum degree of concentration of casualties. It is both uneconomical and inefficient to undertake the care and treatment of the sick and injured in small groups. Successive medical echelons collect casualties from two or more installations in their front until the limit of efficiency in concentration is reached. From this point medical service is expanded by installing parallel chains of evacuation.

j. The military situation, terrain, communication, and availability of means govern the choice of transport by which casualties are moved. They must be moved by the safest, most comfortable, and most efficient transport available. Near the immediate front, litters carried by bearers are ordinarily the only feasible means. Wheeled transport is substituted for manpower as soon as the situation permits. If there be an insufficient number of ambulances, other vehicles returning to the rear must be pressed into service. As soon as practicable, hospital trains, hospital ships, or airplane ambulances are substituted for individual vehicles.

■ 12. DISTRIBUTION OF CASUALTIES IN TIME AND SPACE.—*a. General.*—Experience tables setting forth the distribution of casualties by units by days of combat do not present an accurate picture of the distribution of these casualties in the smaller units in time and space. If a division suffers 12 percent casualties in one day of combat, it is not to be inferred either that each subordinate unit of the division suffers equally, or that $\frac{1}{2}$ percent of the casualties occur each hour of the 24, or even that 1 percent occur each hour of daylight. A company may be almost destroyed in an hour; a battalion may lose 50 percent in a day; and other units may have no battle casualties. This irregular distribution of casualties in time and space may place an insuperable burden on certain medical agencies at a time when others are relatively unoccupied. This fact is an important consideration in medical planning.

b. Areas of casualty density.—Since units suffer unequally, it follows that casualties rarely are distributed evenly over a battlefield. They tend to be concentrated in “areas of casualty density.” The probable locations of areas of casualty density can be deduced from an analysis of the tactical plan. They will be found where the heaviest concentration of fire can be brought to bear upon the densest distribution of troops. This situation ordinarily obtains in those areas of major tactical importance, for here the commander masses his combat means, and here the enemy must oppose to the limit of his strength. Troops moving under fire usually suffer heavier losses than those remaining in position. In the offensive, the main attack is expected to advance more rapidly than secondary attacks. Also, there is ordinarily a greater concentration of troops in the main attack. For these reasons, unless no formidable opposition will be encountered, a higher casualty rate is to be anticipated in the zone of the main effort. It is therefore essential that the surgeon be given adequate information of the enemy situation and the plan for the employment of the unit to enable him to allot his medical means so that continuous preferential support may be given to troops in the probable areas of casualty density. And this information must be available to the surgeon in time to permit of medical units being moved to battle positions before the action begins.

c. Natural lines of drift of wounded.—Seeking treatment for their injuries, wounded men who are able to walk make their way to the rear. Some follow the only route they know, which is the one over which their organization advanced, even though it is exposed to hostile fire. Others instinctively avoid enemy observation and fire, particularly machine-gun fire, by following ravines, stream beds, and other defiladed byways. These routes are known as the natural lines of drift of wounded, and must be considered in the location of all medical installations near the front.

■ 13. EVACUATION LAG.—It is a practical impossibility to provide for the wounded soldier an uninterrupted journey from the front to the fixed hospital in the rear. Delays are inevitable. Some are inherent in the system, others arise from

exigencies of the military situation. The summation of such delays is known as the "evacuation lag." This is a factor of the greatest importance in the logistics of the medical plan. It tends to immobilize medical installations in the combat zone as well as to retard the rate of evacuation. The more important causes of evacuation lag are—

a. Delays due to enemy action.—Hostile fire may seriously interfere with or completely prevent all primary evacuation from the field or from aid or collecting stations for considerable periods of time. In position warfare where combat troops are protected by strong defensive works in open terrain, it is frequently impossible to remove casualties from aid stations except under cover of darkness.

b. Delays due to military requirements.—The movement of troops and supplies may halt the movement of wounded.

c. Difficulties in transportation by manpower.—Litter bearers may have to carry casualties for long distances. This movement may be under heavy fire, requiring circuitous routes or frequent halts. This is a most laborious task, and fatigue soon reduces the *tempo* of the work.

d. Treatment en route.—At each medical installation from front to rear patients are given such treatment as may be necessary to save life or limb, or better to prepare them for further movement. Certain patients are nontransportable for a time because of surgical shock, either from the injury or from necessary surgical procedures.

e. Transportation in convoy.—To promote efficiency through better control, ambulances are operated in convoys whenever the situation permits. This is habitual in rear of the division, and occasionally may be practised in forward areas. Convoys arrive intermittently and evacuation is irregular. Hospital trains and ships and airplane ambulances also arrive at intervals.

f. Irregular distribution of casualties in time and space.—See paragraph 12.

CHAPTER 2

MEDICAL PLANS AND ORDERS

	Paragraphs
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SECTION I

MEDICAL ESTIMATE OF SITUATION

■ 14. REFERENCES.—For general discussions of an estimate of the situation, see FM 100-5 and FM 101-5.

■ 15. PREPARATION.—Every medical officer responsible for the execution of a military task, whether it is to direct the medical service of a theater of operations or to lead a bearer platoon into action, must make an estimate of the situation before arriving at a decision. Formal written estimates are rarely made except in the advance planning of large units. A rapid mental estimate is the rule in the field. Nevertheless, the same process of thought is followed. The estimate is a continuing process of thought. New situations arise constantly. A running estimate of the situation revised as events transpire will be the constant preoccupation of the surgeon, because a planned medical service must be furnished a command from the time it is mobilized until it is disbanded.

■ 16. MISSION.—The mission must never be lost sight of in any of the considerations that follow. Broadly speaking, the mission of all medical units under all conditions is to provide medical service. The mission of the troops served determines the general type of medical operations and a mission to provide medical service for the regiment in the attack of a position implies a different type of medical operation than a mission to provide medical service for the division in a daylight withdrawal. For this reason the medical mission should be stated specifically in conformity with the operations in which the troops supported are engaged.

■ 17. *SITUATION.*—*a. Elements of the situation.*—A medical situation may comprise few or many elements. Certain elements will be present in most situations. Others will appear only occasionally. In considering the discussion that follows, it must not be inferred that all the elements discussed are present in every situation or that each is equally important.

(1) *Enemy capabilities.*—The capabilities of the enemy are a most important factor in any military estimate of the situation; but the surgeon considers them from his specialized point of view. Insofar as the medical service is concerned, they are limited to his potential power of inflicting physical damage upon personnel and animals, and of impeding or prohibiting evacuation. These capabilities result from his strength, his combat efficiency, his position, his weapons, and any other attributes that may be converted into casualties.

(2) *Own situation.*—(a) *Plan of commander.*—The medical service must be adapted to the operations of combat elements. The plan of the commander must be known, as the nature of the operations is a factor in the estimation of the probable number and distribution of casualties.

(b) *Strength.*—Strength is one index of the actual number of casualties to be expected; and, when considered in connection with the capabilities of the enemy and the plan of the commander, it is a factor in estimating the rate of casualty incidence.

(c) *Position.*—In defense, the characteristics of the position, particularly its natural strength and the degree of organization, influence the incidence of casualties.

(d) *Movements.*—Movement under fire is productive of casualties; and the difficulties of evacuation increase in proportion to the rate of movement. The probable extent, direction, and rate of movement of the force, or any major components thereof, should be considered.

(3) *Physical factors.*—There are always physical factors in the situation to influence medical service, either in the number of casualties or in their collection and evacuation. Some of these are—

(a) *Terrain.*—Consider the terrain features that may influence favorably or unfavorably the task of the medical service,

such as cover, protection, shelter, and sources of water supply.

(b) *Communication*.—Avenues of communication are terrain features; but their importance in evacuation warrants special consideration because of susceptibility to air attack. Roads, railroads, and water routes must be considered as their condition, practicability, and availability influence the medical task.

(c) *Weather*.—Weather is a factor in the health of the command, in the shelter required for casualties, in the movements of medical units, and in collection and evacuation. The meteorological service is in a position to make long-range predictions with reasonable accuracy, and since plans are drawn for future operations, predicted weather is more important than conditions prevailing at the time of the estimate. Moonlight may be a factor to be considered.

(d) *Other physical factors*.—In special situations other physical factors may have to be considered, such as contamination of the soil with pathogenic organisms, noxious vegetation, and the pollution of streams with industrial wastes.

(4) *Supply*.—The general and special supply situation is a restrictive factor, and its present status, sources of replenishment, and difficulties of distribution must be considered.

(5) *Physical condition of command*.—Poor physical condition will multiply the numbers of casualties requiring evacuation during prolonged combat. Not only does poor physical condition produce actual disability but it also results in a state of mind that encourages the magnification of minor afflictions and even frank malingering. The mere sorting of such cases places a heavy burden upon the medical service. Physical condition is affected by—

(a) *Origin of troops*.—Soldiers drawn from densely populated urban centers will usually have, until they are well seasoned, less physical stamina than those reared in rural areas. On the other hand, those of urban origin will prove more resistant to communicable diseases.

(b) *Presence of communicable diseases*.—The presence of communicable diseases in a command increases the burden upon the medical service out of all proportion to the numbers of cases involved. Such cases must be isolated during evacu-

ation as well as during treatment; and, in an epidemic, new cases will occur during combat as well as at other times.

(c) *Food supply.*—The adequacy and quality of food are most important factors in physical condition, but never is their influence greater than in combat. The unusual exertion, the lack of rest, and the increase in metabolic rate caused by excitement increase the food requirements of the soldier in combat; and inability to supply him will result in the impairment of physical condition that is reflected in the medical task in the manner described above.

(d) *Water supply.*—For a detailed discussion of water supply, see FM 8-40. An adequate supply of potable water is essential both for the effective soldier and for the casualty.

(e) *Clothing.*—Proper clothing has bearing upon physical condition and is to be considered in connection with the weather.

(f) *Fatigue.*—Fatigue is a most important factor in physical condition. The state of the command with regard to fatigue must be given full consideration in a medical estimate of the situation.

(g) *Other factors in physical condition.*—In special situations other factors may affect physical condition, such as extreme heat, insanitary conditions in field fortifications, deficiency diseases, foot injuries, and foot diseases other than communicable.

(6) *Other elements of the situation.*—In special situations, other elements that will influence the medical task may have to be considered. Morale may have a special importance in a given situation. Another is any restriction upon the freedom of action of the medical service imposed by the commander in the interests of secrecy, deception, or other military necessities.

b. Analysis of the situation.—The individual qualitative values of the elements of the situation are considered in *a* above. In medical planning they must be reduced and analyzed in terms of the premises upon which a medical plan is based. These premises are—

(1) *Estimated number of casualties.*—The number of casualties is a product of the combined influences of enemy capa-

bilities, relative strength, position, own scheme of maneuver, physical factors, morale, and physical condition upon the standard expectancy shown in experience tables.

(2) *Distribution of casualties in time* (also par. 12).—This is important in planning the movement of medical units, the establishment of medical installations, and the arrangements for support by higher echelons; and it will depend upon the enemy capabilities and the plan of the commander.

(3) *Distribution of casualties in space* (also pars. 11e and 12).—The probable distribution of casualties in space is a most important consideration in the allotment of medical means.

(a) *Areas of casualty density*.—These are predictable from a consideration of enemy capabilities, position, terrain, and the plan of the commander. If the factor of physical condition be not uniform throughout the command, it will also exert an influence.

(b) *Lines of natural drift of wounded*.—This is a planning factor only in forward areas where walking wounded must be considered. They may be deduced from a consideration of the terrain and the plan of the commander.

(4) *Medical means required*.—From the estimates of the number of casualties and their distribution in time and space are calculated the number and types of medical units required for the various phases of medical service, such as first aid, collection, evacuation, and hospitalization, including medical support by higher echelons. Neither the means available nor the allotment of specified units should be considered at this stage. This is merely an estimate of the medical means required.

(5) *Supply requirements*.—The supply requirements will depend upon the number of casualties and upon the number of medical units, and to a lesser degree upon the distribution of the casualties in space.

■ 18. MEANS.—Having arrived at the medical means required, the next step is a consideration of the means at hand or readily available. To prevent confusion, these should be separated into four categories.

a. Organic medical units.—The medical units, agencies, and installations that are organic components of the command are listed, and under each is stated its location, strength, and readiness for action.

b. Attached medical units.—Both medical units already attached and those that may be readily had are considered in the manner described in *a* above.

c. Support by higher echelons.—Here is considered the evacuation and other support that will be furnished by higher echelons.

d. Supply.—This includes the supply agencies and the amount of supplies on hand and the facilities for replenishment.

■ 19. PLANS.—A plan is the application of the means at hand to accomplish a task. In arriving at a plan the various factors involved in the task are considered, together with the means available. The many variables usually present in any situation will usually permit more than one plan to be formulated. For this reason the main features of all workable plans should be considered in arriving at a decision.

■ 20. DECISION.—The decision is the result of the estimate expressed in the form of a brief statement clearly setting forth the line of action adopted. The decision is the basis of the plan and states in general terms only the plan adopted after considering all possible plans. The details will be added in the development of the plan. (See sec. II.)

SECTION II

MEDICAL PLANS

■ 21. DEFINITIONS.—*a. A medical plan* is a plan for the operation of the medical service of a command, prepared by the surgeon acting in his capacity of a staff officer. (See FM 101-5.)

b. A unit plan deals only with the operations of the particular unit to which it pertains. It is prepared by the unit commander, based upon the decisions and orders of the next higher commander which prescribe the essential elements of other subordinate plans as well as of the medical plans.

■ 22. PURPOSE AND SCOPE.—*a. Medical plan.*—The scope of a medical plan depends upon the size and complexity of the command to which it pertains. The medical plan of a battalion usually will include little more than the location of the aid station. That of a regiment may include, in addition, arrangements for supply or for some redistribution of medical means; while the medical plan of a division must deal with more functions because of the greater extent of the medical responsibilities.

b. Unit plan.—The purpose of a unit plan is to break down a mission into its component tasks. Its particular virtue is that it visualizes the entire task before allotting specific tasks to subordinate elements. Prodigious dissipation of means is avoided. Committed to action without a plan, a unit may waste its strength in uncoordinated effort. For this reason careful planning is an essential precedent of effective execution. The scope of a unit plan depends upon the situation. In general, it must provide for the accomplishment of the mission and for the disposal of all means, including the means held in reserve.

■ 23. CHARACTERISTICS OF A SATISFACTORY PLAN.—*a. Comprehensiveness.*—A medical plan provides not only for the roles to be played by medical units but also other information required by the commander.

b. Flexibility.—Military situations change frequently and often with little warning; and a plan must be so drawn that, without fatal delay, it may be modified to meet changes in the situation arising either before or after the plan is placed in operation.

c. Simplicity.—Plans are the bases of orders. Elaborate plans require complex orders for expression. A simple plan has a greater chance of success than an involved plan.

■ 24. PREPARATION.—*a. Medical plan.*—The preparation of a medical plan is a responsibility of the surgeon. If he has no assistants he must prepare all the details himself; but, in larger units, the surgeon ordinarily will indicate by a directive the general scheme to his assistants who develop the details.

b. Unit plan.—The unit commander prepares his unit plan with or without the assistance of a staff. A complete formal

plan (par. 26c) will rarely be prepared. The ordinary plan will consist merely of the unit commander's basic decision and the supplemental decisions made by him or an authorized staff officer which, if made of record at all, will be in the form of memoranda.

■ 25. APPROVAL.—*a. Medical plan.*—A complete plan of operations includes the commander's decision and the elaboration of all the details necessary to carry this decision into effect. To insure a well integrated general plan, all staff plans must be coordinated to reconcile conflicting interests and to promote complementary action. This is a function of command, exercised in small units by the commander himself, and in larger units through his general staff or comparable assistants. In common with other staff plans, a medical plan is not operative until it has been approved by the commander. It may be approved item by item; or, if time permits, it may be submitted for approval in its complete form prior to the start of the operation.

b. Unit plan.—Since a unit plan is limited by the decisions, directives, and announced policies of the next higher commander, it does not ordinarily require the approval of higher authority. However, the higher commander may at any time call for the plans of his subordinate commanders.

■ 26. CHECK LISTS.—*a. General.*—The check lists shown herein are intended as guides to the preparation of a complete formal plan. Rarely will plans of a division surgeon or a medical unit commander include all of the items in these lists. Many of the items are covered habitually by standing operating procedures; but they must be provided for in some way in the situations in which each is involved. (See app. I.)

b. Medical plan.—As approved, a medical plan will appear in whole or in part in the administrative order of the command or in the administrative paragraph of the field order. It will facilitate the preparation of such orders if the medical plan follow the sequence of an administrative order. A check list along these lines appears in appendix I; only the items pertaining to the command in question are to be considered.

c. Unit plan.—A complete formal plan for a medical unit may take the form outlined in appendix II.

SECTION III

COMBAT ORDERS OF MEDICAL UNITS

■ 27. REFERENCES.—For a detailed discussion of combat orders, see FM 101-5.

■ 28. PURPOSE.—The purpose of orders is to place in effect the decisions and plans of a commander. The adequacy and clarity of orders become, therefore, vital factors in the execution of plans.

■ 29. SCOPE.—An order must include all the information and instructions required by subordinates to execute their tasks, but nothing more. It should not trespass upon the province of subordinates; and the general rule is that a subordinate should be told what he is to accomplish, but not how to do it. The scope of an order, not to be confused with its length, will depend upon—

a. Establishment of standing operating procedures.—A standing operating procedure may be prescribed by the commander in order to reduce the volume of orders and instructions, and to establish in the command a common understanding of routine operations to be executed. The adoption of such a procedure will save time in the preparation and issuance of orders, minimize the chances for confusion and errors when under stress of combat, and greatly simplify and expedite the execution of operations in the field. (See FM 100-5.)

b. Situation.—A plan may project operations into the future; but plans can be modified without creating confusion as the situation develops. On the other hand, orders should prescribe only so far as conditions can be foreseen. When details are arranged too far in advance, orders usually have to be countermanded with consequent confusion and misunderstanding, possible needless hardships on the troops, and injury to their morale (FM 100-5). Considerations of secrecy may also limit the scope of orders.

■ 30. TYPES.—*a. General.*—A medical unit will rarely issue any type of combat order other than a field order. For a discussion and form of a field order, see FM 101-5.

b. Warning orders.—In certain situations it may be necessary or desirable to issue a warning order. A warning order usually consists of a brief message giving information which will enable subordinate commanders to make the necessary preparations for a contemplated operation. Its principal purpose is to gain time for preparatory measures and to conserve the energy of the troops. (See FM 100-5.)

c. Field order.—A field order is divided into four principal parts: the heading, the distribution of troops (rarely applicable in the field order of a medical unit), the body, and the ending. (See FM 101-5.)

d. Examples.—Examples of field orders of medical units appear in appendix VI.

■ 31. PREPARATION.—The unit commander is responsible for the preparation of all orders issued in his name. The details of preparation of orders are a staff function; but, if there be no staff, the commander must prepare his orders without assistance. In the medical units of a division, orders frequently are issued in fragmentary form as the situation develops and supplemental decisions are made. Such fragmentary orders may be extracts from a complete order, or they may cover various phases of an operation successively. A medical battalion or regiment rarely will be able to issue a complete formal field order prior to initiating operations. A series of fragmentary orders will be the rule.

CHAPTER 3

ATTACHED MEDICAL PERSONNEL

■ 32. MEDICAL DETACHMENTS.—*a.* Tables of Organization provide a detachment of medical troops for each regiment and separate battalion of every arm and service except medical. The term “attached medical” applied to these detachments may convey an erroneous impression of their relationship to the organizations they serve. By definition both a battalion and a regiment are units composed organically of the troops of a single arm or service. For this reason any component element of a battalion or a regiment, made up of troops of another arm or service, must be attached rather than assigned. However, the medical detachment of a unit occupies the same relative position in the unit as a company, troop, or battery.

b. These medical detachments are the foundation upon which is erected the entire structure of field medical service. They provide the primary medical care and treatment without which the value of the more elaborate arrangements in the rear would be considerably lessened. The ultimate recovery of sick or injured depends oftener upon the care and treatment given in forward areas than upon the more refined procedures of fixed hospitals.

■ 33. ORGANIZATION OF MEDICAL DETACHMENTS.—*a. General.*—A unit medical detachment is organized into one headquarters and headquarters section and a battalion section for each battalion in the unit. It is commanded by the senior officer of the Medical Department on duty therewith.

b. Headquarters.—While usually tabulated in Tables of Organization as a part of the headquarters section, the detachment headquarters has the same administrative relationship to all sections. Limited personnel and other considerations may restrict the detachment headquarters to the detachment commander alone, and he may have additional

duties in connection with the headquarters section. Nevertheless, a detachment headquarters exists as long as the function of command is exercised over the detachment as a whole.

c. Headquarters section.—The headquarters section furnishes the overhead for the administration of the detachment, provides medical service for the unit headquarters and for companies that are not parts of battalions, and serves as a small reserve with which the unit surgeon may influence and assist the medical service of the battalions. The detachment overhead is held to the minimum consistent with efficient operation, and all personnel engaged therein are available for other duties in combat. If the character of the unit served by the detachment so indicates, and the headquarters section is of sufficient size, it may be organized into a regimental aid station group and one or more litter squads. Company aid men ordinarily are not furnished to the nonbattalion companies.

d. Battalion sections.—A battalion medical section provides medical service for a battalion at such times as it is impracticable to operate the medical service for the regiment as a unit. Its internal organization depends upon the characteristics of the troops it serves. Ordinarily it includes an aid station group and two company aid men for each company of the battalion. To the battalion sections of regiments of infantry and of artillery normally supporting infantry are added one or more litter squads; but litter squads are omitted in highly mobile units such as cavalry, horse artillery, and mechanized or armored regiments. The battalion section is a subordinate element of the regimental medical detachment, and not of the battalion it normally serves. It is not organized for administration and, if detached from the regimental detachment, must improvise such organization. In the interest of efficiency, a battalion section should be allocated habitually to the same battalion; but situations may arise when exceptions to this rule are indicated.

e. Veterinary section.—When veterinary service is provided a unit, the personnel engaged therein are organized into the veterinary section of the unit medical detachment. This section is commanded by the senior officer of the Veterinary

Corps present for duty therewith, who is also the unit veterinarian. The section occupies a position in the unit medical detachment comparable to that of any of the other sections.

■ 34. SUPPLY OF MEDICAL DETACHMENTS.—*a. In other than combat situations.*—The commanding officer of the detachment is responsible for its supply. He submits to the unit supply officer the requirements of all articles of equipment authorized in Tables of Basic Allowances except that, in permanent camps, he may submit directly to the camp quartermaster his requisitions for the articles of clothing chargeable to enlisted men's clothing allowances. The unit supply officer requisitions the property and, upon its receipt, issues it to the detachment commander on memorandum receipt. The detachment commander, though responsible, is accountable for no property. For further details see AR 35-6520.

b. In combat.—The urgency of supply in combat demands both simplicity and flexibility in methods. Commanding officers, both of unit detachments and of battalion sections thereof, will procure all supplies except medical through the channels provided for other elements of the unit. They will procure medical supplies in any one of the following ways:

(1) By informal request sent to the medical unit in direct support, ordinarily a collecting company. Such supplies will be delivered by litter bearers or ambulances going forward.

(2) By informal request sent to the nearest medical dump. Delivery may be made by ambulance and litter bearers, by transport of the medical supply agency, by transport of the medical detachment or section, or by any combination of these means.

(3) In emergencies the detachment commander may direct the transfer of a part of the combat equipment of one medical section to another.

(4) In the same manner as set forth in *a* above.

(5) By any combination of the methods outlined above.

c. When there is property accountability, nonexpendable property procured from agencies other than the unit supply officer must be reported to him as soon as practicable in order that he may account for it in the prescribed manner.

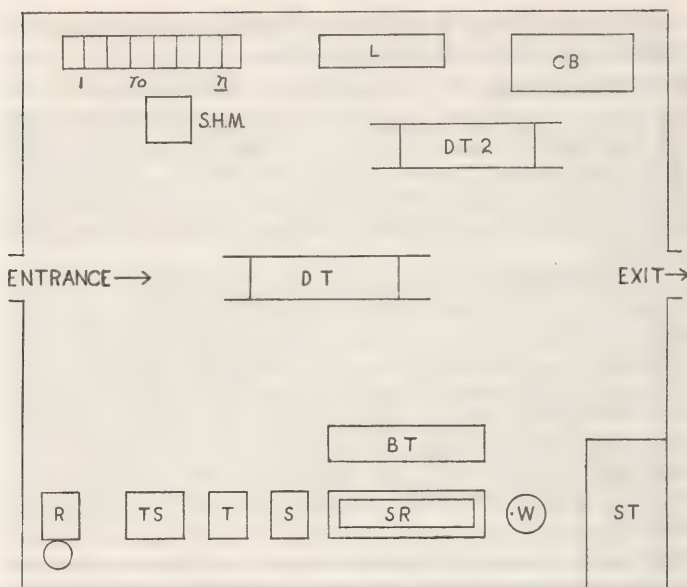
d. For the system of exchange of medical property evacuated with a patient see paragraph 5b.

■ 35. DISPENSARIES.—*a.* A dispensary is an establishment for the routine treatment of slightly sick and injured that are not incapacitated for duty. It is established only when the unit it serves is not exposed to battle casualties. This relative freedom from enemy action permits the use of a more diversified equipment in a dispensary than in an aid station. (See par. 36.)

b. Considerable time and effort may be conserved for other important activities, such as training, if the principle of economy of force be applied in the routine care of the sick and injured. In a compact area, one dispensary may serve the entire regiment, and the personnel therefor may be taken from the various sections and rotated so as least to interfere with other requirements. Dispersion of the elements of the regiment served, however, will require the operation of one or more battalion dispensaries in addition to the regimental dispensary.

■ 36. AID STATIONS.—*a. Definitions.*—An aid station is an installation for the first aid care and treatment of the sick and injured established under combat conditions by a section of a unit medical detachment. (See par. 49a.)

(1) *Regimental aid station.*—The regimental aid station is established by the headquarters section. It ordinarily serves the regimental headquarters and such companies as are not parts of battalions, and is in the same echelon of evacuation as are battalion aid stations. This is to say that rarely are casualties evacuated from a battalion aid station to the regimental aid station. Other employment of this aid station varies with the situation. It may take over the casualties of a battalion aid station that is forced to move before it can be evacuated. It may be established in the area of the regimental reserve so that, when the reserve is committed, the medical personnel of the reserve may be free to accompany it without the delay incident to the disposal of casualties. In other situations the regimental aid station may not be established, the personnel of the headquarters section being used elsewhere.



LEGEND

R RECORDS
 DT DRESSING TABLE
 S TABLE WITH SOLUTIONS
 T TABLE WITH INSTRUMENTS
 SR SPLINT RACKS
 BT TABLE WITH BANDAGE
 CB CASE OF
 BLANKETS
 W WATER

L LITTERS
 S.H.M. STAND FOR HYPO-
 DERMIC MEDICATION
 AND A.T.S.
 DT2 DRESSING TABLE FOR
 TREATMENT OF WALK-
 ING WOUNDED
 S.T. SURPLUS STORES
 TS STERILIZER TABLE

I TO n MEDICAL CHESTS

FIGURE 1.—One arrangement of aid station. Arrangements vary with characteristics of site.

(2) *Battalion aid station.*—A battalion aid station is established by a battalion section to serve a battalion, including any detachments.

(3) *Veterinary aid station.*—Since there is but one veterinary section in a regimental medical detachment, ordinarily

only one veterinary aid station is established by the veterinary section. This serves all animals in the regiment. For veterinary service with cavalry, see chapter 4.

b. Location.—Because of the greater importance of other requirements, the physical features of the site of an aid station will vary from a comfortable building to a few square yards of ground without shelter from the elements.

(1) *Desirable features.*—It will rarely be possible to find a site that satisfies all requirements, but the following features are desirable in an aid station site:

- (a) Protection from direct enemy fire.
- (b) Convenience to the troops served.
- (c) Economy in litter carry.
- (d) Accessibility to supporting medical troops.
- (e) Proximity to natural lines of drift of wounded.
- (f) Facility of future movement of the station to front or rear.
- (g) Proximity to water.
- (h) Protection from the elements.

(2) *Undesirable features.*—Locations in proximity to terrain features or other military establishments that invite enemy fire or air action should be avoided. Examples are prominent landmarks, bridges, fords, important road intersections, battery positions of artillery and heavy weapons, ammunition dumps, and other distributing points.

c. Functions.—The functions of an aid station are—

- (1) Reception and recording of casualties.
- (2) Examination and sorting of casualties; returning the fit to duty.
- (3) Dressing or redressing of wounded; treatment, limited to that necessary to save life or limb and to prepare patients for evacuation for short distances; administration of narcotics and prophylactic sera.
- (4) Prophylaxis and treatment of shock and exhaustion with hot foods and drinks.
- (5) Temporary shelter of casualties, when practicable.
- (6) Transfer *at the aid station*, of evacuees to the supporting medical echelon.

d. General procedures of operation.—(1) An aid station must keep at all times in contact with the unit it is support-

ing. It must be moved, by echelon if necessary, as soon as movement of the combat elements makes a previous location unsuitable.

(2) Only such part of an aid station is established as immediate circumstances require or for which need can be foreseen. Rapid forward movement of combat elements is usually associated with small losses; and casualties can be collected by litter squads into small groups along the axis of advance and given first aid. Such casualties can be evacuated promptly by the medical unit in close support, thus relieving the need for an established aid station and permitting the medical section to keep up with the combat troops.

(3) An aid station is not the proper place for the initiation of elaborate treatment. Such measures will retard the flow of casualties to the rear and immobilize the station. (See c(2) above.)

e. Organization.—The organization of an aid station will depend upon the unit and the situation. In general, the functions of recording, examination, sorting, treatment, and disposition must be provided for in every situation. These will require one or more medical officers, assisted by noncommissioned officers and enlisted technicians. The allocation of personnel to these functions is a responsibility of the section commander.

f. Equipment.—The equipment of an aid station is limited to the instruments, medicines, dressings, foods, blankets, and litters necessary for the emergency care and treatment of casualties. It is sufficiently compact to be transported on one vehicle of the light cargo type used in the unit, in two Medical Department carts, or on pack animals. Available equipment is ample enough to initiate and sustain combat until replacement can be made through medical supply channels. It is combat equipment, and the transport carrying it travels with that part of the train that accompanies the unit into action.

g. Veterinary aid station.—See paragraph 42c(2)(b).

■ 37. LITTER SQUADS.—*a. Composition.*—A litter squad ordinarily consists of four bearers. Fewer bearers are unable to withstand the fatigue of long or frequent carries.

b. Functions.—(1) Maintaining contact with combat elements.

(2) Prompt removal of all nonambulant sick and injured from the fighting line and their evacuation to the aid station.

(3) Directing and assisting the ambulant sick and injured to the aid station.

(4) When necessary, searching the field for sick and injured; administering first aid treatment, tagging, and evacuation to the aid station.

(5) Assisting the aid station group in moving and reestablishing the aid station.

■ 38. COMPANY AID MEN.—*a.* The need of immediate first aid care and treatment at the scene of injury is met by the detail of one or more medical soldiers to each company. These are the company aid men. They follow their respective companies in battle, giving such first aid treatment as is possible under the conditions; tagging the casualties, including the dead; placing nonambulant sick and injured in advantageous positions where they will be sheltered until evacuated by the litter squads; and directing ambulant casualties to the aid station. They keep their unit surgeons informed of the tactical and medical situations in their front by means of messages carried by litter squads.

b. The usefulness of a company aid man is increased if he knows and is known by the company to which he is detailed. This indicates the detail of the same aid men to the same companies whenever practicable. When medical detachments or sections are distributed among several organizations for messing, aid men should be messed with their respective companies. However, unless he is formally attached to a company, an aid man is immediately responsible to his section commander. The discipline, training, supply, and administration of aid men are functions of medical command.

■ 39. REGIMENTAL SURGEON.—*a. Designation.*—For the official title of surgeons of regiments, see paragraph 4c. Generically and when referred to in less formal language, they are known as regimental surgeons.

b. Status and functions.—(1) The regimental surgeon has a dual status. He is a staff officer of the regimental com-

mander and he is in immediate command of the regimental medical detachment. Such of his functions as pertain to the health and medical service of the command are exercised in his capacity of a staff officer. Those that are associated with the administration, training, and operations of the medical detachment are command functions. While certain of his duties involve both staff and command functions, the distinction between the two must be clearly recognized.

(2) He is responsible for the organization of the detachment and the assignment of commissioned and enlisted personnel to the several sections. He conducts so much of the training of the detachment as is not given in conjunction with the training of the combat elements of the regiment. He establishes and operates the regimental dispensary, and supervises the operation of battalion dispensaries. He makes the required medical inspections and keeps the regimental commander informed of the medical situation in the regiment.

(3) The regimental surgeon, as detachment commander, has the same supply responsibility as a company commander (par. 34). As a staff officer of the regimental commander, it is his duty to inform the regimental commander of any deficiencies in items of medical supply issued to and used by the combat elements of the regiment.

(4) As the regiment approaches combat, the surgeon's duties as a regimental staff officer assume increasing importance. He learns of the plans for the distribution and employment of the units of the regiment, of the opposition the various elements are expected to meet, and of the terrain over which they will operate. From this information he makes a medical estimate of the situation, deducing the probable areas of casualty density, and from this he indicates the areas to be reconnoitered for aid station sites. He prepares the medical plan and submits it to the regimental commander. If the regiment has a veterinary service, this will include the veterinary plan. (See par. 42.)

(5) Methods of influencing the medical service within the battalions include such steps as establishing the regimental aid station for the purpose of relieving one or more battalion sections of the necessity for early establishment, reinforcement of one or more battalion sections with personnel from

the headquarters section or from other battalion sections, and securing medical supplies prior to combat and distributing them to the several sections in accordance with their needs as he foresees them.

(6) During combat the regimental surgeon is concerned with reports of the progress of the fight. From these he visualizes the needs of the various medical sections and takes steps to assure replacements or reinforcements of personnel and replenishment of supplies. He keeps in touch with the forward planning of the regimental staff. When the regimental commander contemplates a special mission for one of the battalions, the surgeon can clear that battalion of wounded by directing the regimental aid station to move to the vicinity, or he may request special priority in the evacuation of the aid station of that battalion.

(7) One of the most important duties of the regimental surgeon in combat is keeping the medical unit of the next higher echelon informed of the situation in his front, especially any change that will affect the evacuation of his aid stations.

(8) The regimental surgeon is provided with one or more commissioned assistants. To such he may assign part of his duties, but none of his responsibilities. (See pars. 40, 41, and 42.)

■ 40. BATTALION SURGEON.—*a. Definition and designation.*—Except in the case of separate battalions (par. 45), surgeons are not provided as permanent staff officers of battalion commanders. When medical personnel are attached to a battalion, the senior officer of the Medical Corps, so attached, is the battalion surgeon. His official title is the "surgeon," followed by the designation of the battalion; e. g., the surgeon, 2d Battalion, 4th Infantry. When a battalion section is not attached to a battalion for duty, its commander has no staff functions. His command functions are comparable to those of a platoon commander; and he is, in addition, an assistant of the regimental surgeon.

b. Duties and responsibilities.—The staff functions of a battalion surgeon are comparable to those of a regimental surgeon. (See par. 39.) His command functions are not as

extensive. The battalion section has no normal administrative or supply functions, and assumes these only when it is impracticable for the regimental detachment headquarters to undertake them. The supply responsibility of the section commander is limited to keeping the detachment commander informed of the status of the battalion section equipment and, in combat, the emergency procurement of supplies as outlined in paragraph 34b. The duties and responsibilities of the battalion surgeon in combat are to—

- (1) Obtain from the battalion commander the available information and tactical plan of the battalion. Make a medical estimate of the situation and, when practicable, a reconnaissance of possible aid station sites. Submit the medical plan to the battalion commander.

- (2) Make the necessary dispositions of the battalion section.

- (3) Establish the aid station when and where indicated, supervising its operation and personally assisting in the care and treatment of casualties whenever necessary.

- (4) Supervise the employment of the litter squads.

- (5) Keep in contact with the battalion commander and the forward planning of the battalion staff, and project his own plan to correspond.

- (6) Make or cause to be made the necessary reconnaissances, when practicable, for relocation of the aid station.

- (7) Keep the battalion commander informed of the medical situation, and make the necessary recommendations for reinforcement of the medical service.

- (8) Furnish information to the regimental surgeon and to the medical unit in immediate support of the situation in his front with such requests for special support or immediate evacuation of his casualties as may be necessary.

- (9) Perform such other duties as the battalion commander may require.

■ 41. DENTAL SERVICE.—*a. Organization.*—Personnel of the dental service, both commissioner and enlisted, ordinarily are assigned to the headquarters medical section. The senior dental officer is the unit dental surgeon. As an assistant of the unit surgeon, he supervises the dental service of the unit. To each dental officer is assigned for duty one enlisted assist-

ant who is at his immediate disposal for technical training and employment. Additional enlisted men may be allocated to the dental service. Enlisted men of the dental service are trained in the general duties of the medical soldier and are available in combat for any duty that may be required of them.

b. Equipment.—The unit equipment of a medical detachment includes a portable dental dispensary for each dental officer authorized by the Tables of Organization. In addition, all dental officers and dental assistants carry individual equipment of a technical nature.

c. Employment.—(1) *In other than combat situations.*—The functions of the dental service are dental inspection and classification of all troops in the unit, supervision of the instruction in oral hygiene, and the treatment or correction of dento-oral diseases, injuries, abnormalities, and deficiencies. Dental officers operate one or more dental dispensaries, ordinarily combined with regimental or battalion dispensaries. They may be attached temporarily to battalions that are located in areas inconvenient to the regimental dispensary.

(2) *In combat.*—While the technical training and skill of the dental service are to be utilized in its own field whenever indicated, the functions of first aid to and emergency care and evacuation of casualties become the paramount responsibility of the medical service in combat. The dental personnel are employed in combat as any other personnel of the medical service. They may be used in the regimental aid station, or attached individually to any battalion section.

■ 42. VETERINARY SERVICE. — *a. Organization.* — Veterinary service is, of course, included in the medical service of only those units in which there are animals. By reason of its distinctive field of endeavor, the veterinary service is granted the degree of autonomy required for the proper discharge of its functions. The personnel of the veterinary service, both commissioned and enlisted, are organized into the veterinary section of the regimental medical detachment. The senior veterinary officer commands this section and as the unit veterinarian is an assistant of the unit surgeon. The veterinary section depends for supply and administration upon

the detachment headquarters and the responsibility of the section commander in these matters is the same as that of a battalion section commander. (See par. 40.)

b. Equipment.—In addition to the individual equipment of its officers and enlisted men, the veterinary section is provided unit dispensary and combat equipment sufficient for the routine care and treatment of slightly sick and injured animals and for the first aid treatment and evacuation of battle casualties among animals. Transportation, either pack or wheeled, is furnished for the unit equipment.

c. Employment.—(1) *In other than combat situations.*—The principal functions of the veterinary detachment in other than combat situations are—

(a) The care and treatment of slightly sick and injured animals.

(b) Classification of disabled animals into serviceable and unserviceable, and destruction of the latter class as authorized.

(c) Sanitary supervision of stables, corrals, and picket lines.

(d) Sanitary inspection of forage and of foods of animal origin issued for consumption by the troops of the unit.

(e) The prevention and control of communicable diseases in animals.

(2) *In combat.*—(a) *Unit veterinarian.*—When combat is imminent, the unit veterinarian makes a reconnaissance, when practicable, for suitable sites for veterinary aid stations and recommends one or more to the unit surgeon. The latter coordinates the requirements of the veterinary service with other requirements, selects a site for the veterinary aid station, and includes it in the unit medical plan. The unit veterinarian establishes and operates the veterinary aid station. He directs the veterinary service of the unit. He furnishes necessary information to the unit surgeon and to the veterinary unit in immediate support of his aid station.

(b) *Veterinary aid station.*

1. *Organization.*—Ordinarily only one veterinary aid station is established for each regiment or unit of comparable size. When a battalion or squadron is operating at such a distance as

to make evacuation difficult or impossible, the veterinary detachment may be split and operate two veterinary aid stations. In small veterinary detachments all personnel are required for the operation of the veterinary aid station. In larger detachments it may be advantageous to attach temporarily veterinary aid men to squadrons or battalions, and in mounted cavalry action one to each troop. Compare with company aid men in paragraph 38.

2. *Location*.—Insofar as they apply to the care, treatment, and evacuation of animals, the characteristics of a location for an aid station, as given in paragraph 36*b*, are desirable for the location of a veterinary aid station. Areas of animal casualty density may be expected where animals are most numerous.

3. *Functions*.—The functions of the veterinary aid station are reception and recording of animal casualties, first aid treatment of sick and injured animals, the prompt return to the organizations of such animals as are fit for further duty, the collection for evacuation of salvageable animals that are temporarily incapacitated for duty, the destruction of all nonsalvageable animals, and the transfer at the veterinary aid station of animal evacuees to the supporting veterinary echelon. The veterinary aid station must not become immobilized by undertaking definitive care of disabled animals. Such animals as cannot be returned to duty or prepared for immediate evacuation must be destroyed.

■ 43. *TRAINING*.—*a. Responsibility*.—The regimental (or separate battalion) commander is responsible for the training of the medical detachment of his unit.

b. Conduct.—The unit surgeon conducts all training of the medical detachment that is not conducted jointly with other elements of the unit. Technical training of dental and veteri-

nary personnel is under the immediate direction of the unit dental surgeon and the unit veterinarian, respectively.

c. Purpose.—The purpose of the training of a medical detachment is to insure prompt and efficient care and treatment of the sick and injured of the unit, the coordination of the medical service with the operations of the unit, and the competency of the detachment to maintain itself in the field with the resources at its disposal.

d. Scope.—(1) *General training.*—(a) *Military.*—The basic military training common to all arms and services, formations and ceremonies of the unit of which the detachment is a part, formations under fire, and map reading and orientation on the ground.

(b) *Technical.*—First aid, pharmacy, nursing, dressing of wounds, control of hemorrhage, splinting of fractures, and transportation of the sick and injured.

(2) *Special training.*—Training of specialists in administration, supply, transportation, and the technical specialties pertaining to the care and treatment of sick and injured men and animals.

(3) *Tactical training.*—(a) *Separate.*—Training under the unit surgeon in the dispositions and employment of the medical detachment in combat, establishment and movement of aid stations, use of combat equipment, and the collection of casualties. For veterinary personnel, this phase of training will pertain to the tactical employment of the veterinary section.

(b) *Combined.*—Participation in map maneuvers, command post exercises, tactical rides, field exercises, and field maneuvers of the unit of which the detachment is a part.

■ 44. QUARTERS AND RATIONS.—*a. In posts or camps.*—There are advantages in administration, supply, employment, and training of a unit medical detachment in quartering the several sections of the detachment together. Such an arrangement does not preclude joint training of the sections with the units they serve in action. Tables of Basic Allowances include no mess equipment for attached medical personnel, nor are cooks provided in Tables of Organization. In large de-

tachments it may be expedient at times to draw mess equipment and detail cooks. Otherwise, the detachment is messed with one of the companies, or each of the several sections with a different company.

b. In field.—(1) *In other than combat situations.*—With the unit well concentrated, medical service may be centralized in one dispensary, and the entire detachment quartered in one area. (See *a* above.) However, dispersion of the unit over a considerable area will require a suitable distribution of the several sections of the detachment. In the field the medical detachment habitually messes with one or more of the companies of the unit. If the detachment is distributed among several companies, it is preferable that each battalion section mess with one company of its battalion, and that the headquarters section mess with one of the companies not a part of a battalion. The veterinary section may be attached for rations with still another company that is more conveniently located. When company aid men are attached to the companies, they will mess with their respective companies. (See par. 38.)

(2) *In combat.*—The several sections are quartered and rationed with the troops they are serving—company aid men with their companies, and the remainder of the section with one of the companies.

■ 45. MEDICAL DETACHMENTS OF UNITS OF VARIOUS ARMS AND SERVICES.—*a. General.*—The basic function of a medical detachment, regardless of the unit to which it is attached, is to provide primary medical care and treatment. For this reason the general principles of organization and employment of attached medical personnel are the same in units of all arms and services. However, while the function is invariable, the methods of discharging that function depend upon the situations created by the tactical employment of the unit. These, in turn, are governed by the special characteristics of the unit or the general characteristics of the arm or service to which it belongs. These variations in situations and methods require appropriate modifications of the internal organization of the sections of unit medical detachments.

b. Infantry.—(1) *Rifle units.*—(a) The characteristics of Infantry that influence the organization and employment of its medical service are as follows:

1. The battalion is the basic tactical unit. It may operate over relatively large areas, and occupy frontages varying between 500 and 3,000 yards.
2. Normally, Infantry is exposed to the fire of all types of weapons and to air action.
3. The casualty rate of Infantry is usually higher than any other arm or service.
4. Infantry must be able to maneuver and to fight over all kinds of ground.

(b) The material in this chapter is based primarily upon the medical detachment of the infantry rifle regiment. The principal difference in the organization of this detachment from that of others lies in the larger number of litter squads which are required by the special characteristics of infantry combat.

(2) *Mechanized and armored units.*—See *g* below.

c. Cavalry.—(1) *Horse cavalry.*—(a) The characteristics of horse cavalry that influence the organization and employment of its medical service are as follows:

1. The squadron is the basic tactical unit. It is a smaller organization than the infantry battalion.
2. *Mobility.*—The essence of cavalry action is maneuver. All services with Cavalry must be highly mobile.
3. Cavalry frequently operates at considerable distances from supporting troops.
4. The casualty rate is, in general, less than that of Infantry. Cavalry is not designed to assault strongly defended positions nor to make a determined defense against strong attacks by Infantry.
5. Cavalry fights mounted and dismounted.
6. Animals are the principal means of transportation of horse Cavalry.

(b) The *organization and employment* of medical detachments of units of horse Cavalry follow, in general, that of

medical detachments of infantry units. The smaller size of the detachments, and the rapidity of movement and dispersion of the elements of cavalry units, make the collection and evacuation of casualties difficult. The only favorable factor is that casualties are rarely as heavy as in infantry units. The principal features of medical detachments of cavalry units that distinguish them from those of infantry units are as follows:

1. *Litter squads*.—The smaller size of the squadron sections permits not more than one litter squad per section if an aid station be operated. Otherwise, additional litter squads may be formed from aid station personnel.
2. *Aid station*.—It is rarely feasible to establish an aid station in a mounted action, and it may not be practicable to establish one in a rapidly moving dismounted action. First aid is rendered on the field; wounded troopers able to ride are directed to the rear, while those unable to ride are assembled along the axis of movement to be evacuated by a supporting echelon.
3. *Evacuation*.—Evacuation may be difficult. The operations may be at such a distance, movement so rapid, or terrain such that supporting medical echelons cannot maintain contact. Lines of communication may be interrupted. In these events, casualties must be either carried with the command or abandoned—in the latter case, in friendly hands if possible. To lessen the dependence of medical detachments upon supporting echelons, and to facilitate the removal of casualties from the field, one field ambulance is provided for the detachment of each regiment of horse Cavalry.
4. *Veterinary service*.—The medical detachment of a regiment of horse cavalry includes a veterinary section.

(2) *Mechanized elements*.—See *g* below.

d. Field Artillery.—(1) The characteristics of Field Artillery that influence the organization and employment of its medical service are as follows:

(a) The battalion is the basic tactical unit. When it is a part of a large force of artillery, the area assigned the battalion is relatively small, and within the battalion area the batteries are usually echeloned only sufficiently to avoid too compact a target. (See FM 6-20.)

(b) When in position, field artillery units are rarely exposed to small arms fire.

(c) The casualty rate is less than that of Infantry, and casualties tend to occur at irregular intervals. The damage to its matériel makes it desirable, in the absence of other considerations, for an artillery unit to change its position when effective fire is brought to bear against it.

(d) A battalion position is a relatively fixed arrangement. Artillery does not maneuver while actually engaged. Change of position is a definitive operation, and tactical employment ceases during movement.

(e) The majority of artillery positions are often farther to the rear than collecting stations.

(f) Some artillery is transported by pack animals.

(2) The organization and employment of medical detachments of field artillery units reflect these characteristics in:

(a) *Litter squads.*—With one exception, battalion medical sections in field artillery units do not include permanent litter squads. The compact battalion position makes the distances between battery positions and the aid station relatively short, and casualties can be carried this distance by battery aid men with or without assistance from artillery personnel. The organic ambulances ((c) below) may be used for this purpose if distances are great and their use is practicable. Searching of the field for wounded is rarely required. The one exception is that the battalion medical sections of the 75-mm gun regiments are large enough to permit of the detail of four men as a litter squad.

(b) *Aid station sites.*—The general requirements of a site for an aid station are the same as those of Infantry. However, the location of the aid station is governed by different

considerations. It should be conveniently located either within or immediately adjacent to the battalion position.

(c) *Evacuation of aid stations.*—The fewer casualties and the relatively greater stability of the aid stations permit casualties to be prepared better in field artillery aid stations for evacuation than ordinarily is feasible in the aid stations of infantry units. For this reason, as well as the fact that it would frequently require a forward movement of casualties, the casualties of a field artillery aid station rarely pass through a collecting station but are evacuated directly to the clearing station. Field artillery aid stations may be evacuated on call by ambulances of the division medical unit. (See ch. 6.) However, motor ambulances are organic equipment of all medical detachments of field artillery units, allotted on the basis of one per battalion medical section. With this equipment the medical detachments of field artillery units should evacuate their own aid stations.

(d) *Veterinary service.*—In units of horse, horse-drawn, and pack artillery, a veterinary section is a component part of the unit medical detachment.

e. *Antiaircraft artillery.*—The principles laid down for the medical service of Field Artillery apply, in general, to the medical service of antiaircraft artillery. (See *d* above.) Unless antiaircraft artillery be plentiful, the dispersion of the units will ordinarily be greater than in the case of Field Artillery with reference both to battalions and to batteries within a battalion. This dispersion adds to the difficulties of medical service; but this disadvantage is somewhat offset by the lower casualty rate. Antiaircraft units also may profit by incidental medical service furnished by other units in the immediate vicinity. The larger batteries are provided with three battery aid men instead of the usual two.

f. *Combat engineers.*—(1) *Characteristics.*—Combat engineer units function primarily in engineering missions, but they may also engage in combat in the role of Infantry. Both battalions and companies are smaller than their infantry prototypes.

(2) The *organization* of the medical detachment of a combat engineer unit is designed to serve the unit in its primary

function. Battalion sections are small, and only one company aid man is furnished each company in the usual situation. The *employment* of the detachment depends upon the employment of the engineer unit:

(a) *In engineering missions.*—The unit is frequently dispersed—even companies and platoons being separated. The scattered elements obtain incidental medical service from other units in their vicinities, and regimental or battalion dispensaries are operated at the headquarters.

(b) *In combat missions.*—The medical service is exactly like that of Infantry. The small size of the detachment makes it necessary that it be reinforced, particularly with litter bearers, when it engages in combat. Ordinarily, the only source of reenforcements will be the engineer unit.

g. Mechanized armored and motorized units.—(1) The *characteristics* of mechanized forces that influence the organization and employment of their medical service are—

(a) Great mobility, both on roads and cross country.

(b) Wide radii of operations. Such units may operate as far as 150 miles or more from a base.

(c) Insecure communications. When operating at a distance from supporting elements, lines of communication may be temporarily interrupted.

(d) Maneuver is the essence both of combat and of security. Combat is followed by movement.

(e) Personnel for the most part maneuver or fight in armored vehicles.

(f) Their tactics are almost invariably offensive. Even though the general nature of the operations be defensive, mechanized elements are ordinarily employed offensively.

(2) The *organization and employment* of the medical detachments of mechanized and armored units reflect these characteristics in directing the principal efforts at first aid either in the vehicles or on the field, and carrying the casualties with the command in combat or other vehicles until they can be evacuated with safety. Aid stations are ordinarily established at the location of the maintenance vehicles. Cross country ambulances are organic equipment of medical detachments.

h. Other arms and services.—Other medical detachments in the division operate dispensaries at or near their unit headquarters and may provide company aid men to the companies of their unit. All scattered elements obtain incidental medical service from other units in their vicinities.

■ 46. MEDICAL DETACHMENTS OF SEPARATE BATTALIONS.—The principles of organization, administration, supply, employment, and training of medical detachments of regiments, set forth in this chapter, apply also to the medical detachments of units other than regiments. Since the battalion medical section is the primary operating unit of attached medical personnel, no further permanent subdivision of a medical detachment is permissible, although medical personnel may be temporarily attached to units smaller than a battalion. The medical detachment of a separate battalion or comparable unit is, therefore, organized as a battalion medical section with the addition of the overhead required for administration and supply. This overhead, however, is available for other duty. See also headquarters section of a regimental medical detachment (par. 33*a* and *b*). The surgeon of a separate battalion or comparable unit has the combined responsibilities and duties of a regimental and a battalion surgeon. (See pars. 39 and 40.)

CHAPTER 4

DIVISION MEDICAL SERVICE

■ 47. **DEFINITIONS.**—The medical service of a division consists of two echelons: the attached medical personnel and the division medical service. The operations of attached medical personnel are controlled by subordinate unit commanders (see ch. 3). The division medical service is operated directly under division control. In the several types of divisions it consists of—

a. Square infantry division.—A division surgeon's office and one medical regiment (division).

b. Triangular infantry division.—A division surgeon's office and one medical battalion.

c. Cavalry division.—A division surgeon's office and one medical squadron.

d. Armored division.—A division surgeon's office and one medical battalion.

■ 48. **DOCTRINE OF EMPLOYMENT.**—The following doctrines govern the organization and operation of division medical service:

a. Close support of attached medical personnel.—Attached medical personnel furnish a continuous medical service to the subordinate units of the division. However, both the scope and the capacity of this service are limited, and prompt evacuation of noneffectives is vital to the effective operation of unit medical detachments. (See par. 11.)

b. Mobility.—Since the impetus of evacuation is from the rear, support of a forward element is impossible unless the supporting echelon be equally mobile, and relatively ineffective unless the supporting echelon have greater mobility. The mobility of collecting units must be comparable to that of the battalions or squadrons they are designed to support. The mobility of clearing units must be comparable with that of brigades or similar units. When, in the interest of the sick

and injured, the mobility of a medical unit must be sacrificed to technical requirements, as in the case of evacuation hospitals, the mobility of the service rendered by such units is maintained by increasing their number and displacing them by echelon as the need arises. (See par. 11b.)

c. Flexibility.—While the advantages of standing operating procedure (see par. 29a) are recognized, this phrase must not be construed as imposing rigidity upon the operation of medical service. (See pars. 11b and 23b.)

d. Economy of force.—No more troops should be committed, and no more installations should be established, than are required for the task at hand or the obvious needs of the immediate future. Once committed, considerable time is required to make a unit available for other employment; and the establishment of a station immobilizes that unit for a period, the length of which will depend upon the elaborateness of the station and the number of casualties therein.

e. Attachments to subordinate forces.—Whether the division medical service will be operated exclusively under central control, or whether a portion will be attached to a subordinate force, is determined by each situation. If adequate control can be maintained by central authority, no attachments should be made. However, if certain elements of the division, such as a reinforced brigade or an infantry-artillery combat team, are operating at such a distance from the bulk of the division installations that effective control is difficult, a suitable fraction of the division medical service should be attached to that force.

■ 49. ORGANIZATION.—*a. References.*—For the organization of the division surgeon's office, see paragraph 52c. For the functional organization of the division medical service, see chapters 5, 6, and 7.

b. Medical regiments, battalions, and squadrons.—(1) *Division medical regiment* (square division).—The medical regiment of a square division consists of a headquarters, a band, a headquarters and service company, and three battalions of three companies each. For details, see T/O 8-21.

(a) *Headquarters.*—The regimental headquarters consists of the regimental commander (who is also the division surgeon) and his staff. Enlisted personnel are provided from the

headquarters and service company. Regimental headquarters is not to be confused with the division surgeon's office; they are separate and distinct organizations, and usually located at different places.

(b) *Band*.—The band is a standard regimental band of 1 warrant officer and 28 enlisted musicians.

(c) *Headquarters and service company*.—This is the administrative and supply unit of the regiment. It comprises—

1. The enlisted overhead for the regimental and three battalion headquarters;
2. The organization for the general and medical supply of the regiment;
3. The organization for the medical supply of the entire division;
4. The regimental motor repair section.

It has no functions directly connected with the care or evacuation of casualties. For its supply functions, see paragraph 54.

(d) *First Battalion*.—The First Battalion is composed of a headquarters and three collecting companies.

1. The headquarters consists of the battalion commander and one commissioned assistant; the enlisted force for the battalion headquarters is furnished by the headquarters and service company. For further details, see T/O 8-25.
2. *Collecting company*.—The three collecting companies are designated A, B, and C, respectively. Each consists of a company headquarters and three platoons. The first platoon comprises a collecting station section and a liaison section; the second and third platoons are litter bearer platoons.

(e) *Second Battalion*.—The Second Battalion is composed of a headquarters and three motor ambulance companies.

1. The headquarters is organized like that of the First Battalion ((d) above). For further details, see T/O 8-35.
2. *Motor ambulance company*.—The three companies of this battalion are designated D, E, and F, re-

spectively. Each consists of a company headquarters and two platoons of motor ambulances.

(f) *Third Battalion*.—The Third Battalion is composed of a headquarters and three clearing companies.

1. The headquarters is organized like that of the First Battalion ((d) above). For further details, see T/O 8-45.

2. *Clearing company*.—The three companies of this battalion are designated G, H, and I, respectively. Each consists of a company headquarters and three platoons. The first platoon is the technical platoon, the second is the ward platoon, and the third is the transportation platoon.

(2) *Medical battalion* (triangular division).—The organizations of the medical battalion of a triangular division comprise a headquarters, detachment medical battalion, three collecting companies, and one clearing company. For further details, see T/O 8-65.

(a) *Headquarters detachment, medical battalion*.—The headquarters detachment is made up of the following sections:

1. Battalion headquarters section.
2. Detachment headquarters.
3. General and medical supply sections.
4. Motor maintenance section.

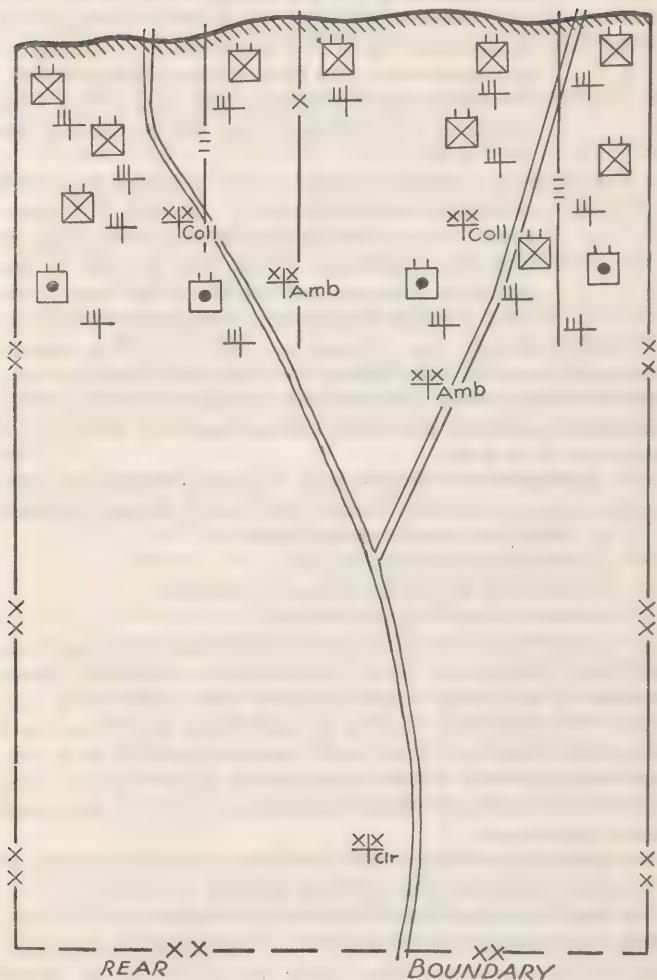
(b) *Collecting companies*.—The medical battalion has three collecting companies. Each consists of a company headquarters, a collecting station platoon, and a collecting platoon. The collecting platoon is subdivided into bearer and ambulance sections. The bearer section consists of a platoon headquarters, which includes the liaison agents, and three bearer sections. Each ambulance section is furnished twelve ambulances.

(c) *Clearing company*.—The clearing company consists of a company headquarters and two clearing platoons.

(3) *Medical squadron*.—The medical squadron of a cavalry division consists of a headquarters, a headquarters and service detachment, a collecting troop, a clearing troop, and a veterinary troop. For details, see T/O 8-85.

(a) *Headquarters*.—The headquarters consists of the squadron commander, who is also the division surgeon, and his

FRONT LINE



(Not drawn to scale. Note that one collecting company and one ambulance company is supporting each brigade combat team, and that the clearing unit(s) is (are) supporting the entire division.)

FIGURE 2.—Schematic representation of medical service of infantry division (square) in combat.

staff. Enlisted personnel are furnished by the headquarters and service detachment.

(b) *Headquarters detachment.*—This detachment consists of three sections: a headquarters section which furnishes the enlisted overhead for the squadron headquarters, a general and medical supply section, and a motor maintenance section.

(c) *Collecting troop.*—The collecting troop consists of a headquarters, and two collecting platoons. Each platoon is organized into a collecting station section, a bearer section, and an ambulance section.

(d) *Clearing troop.*—The clearing troop consists of a headquarters and two clearing platoons. Each clearing platoon is organized into a technical section, a ward section, and a transportation section.

(e) *Veterinary troop.*—The veterinary troop consists of a headquarters, a clearing platoon, and two collecting platoons. (See par. 53.)

(4) *Medical battalion, armored division.*—The medical battalion of an armored division consists of a headquarters, a headquarters detachment, a collecting company, and a clearing company. For details, see T/O 8-75.

(a) *Headquarters.*—The headquarters consists of the battalion commander, who is also the division surgeon, and his staff. Since the division surgeon's office is an administrative office distinct from the medical battalion and located at division headquarters, enlisted personnel therefor is provided by the armored division headquarters. (See T/O 17-1.)

(b) *Medical headquarters and headquarters detachment.*—This detachment consists of four sections: a headquarters section to furnish the enlisted overhead for the battalion headquarters, a battalion headquarters section, a supply section, and a maintenance section.

(c) *Collecting company.*—The collecting company consists of a headquarters and two collecting platoons. Each platoon is organized into a platoon headquarters, an ambulance section, and a litter bearer section.

(d) *Clearing company.*—The clearing company consists of a headquarters and two clearing platoons. Each clearing

platoon comprises a platoon headquarters, a technical section, a ward section, and a transportation section.

■ 50. EQUIPMENT.—*a. Classification.*—The equipment of an organization is divided into individual equipment and organizational equipment. For detailed lists of equipment, see appendixes III, IV, and V.

b. Individual equipment.—All officers of the Medical, Dental, and Veterinary Corps, and all enlisted men of the Medical Department, carry on their persons special equipment for the first aid treatment of sick and injured men or animals. This equipment is specialized to meet the needs of medical, dental, and veterinary service. Corresponding with the degrees of technical training, the individual equipment of officers is more elaborate than that of noncommissioned officers; and that of the latter is more elaborate than the individual equipment of privates.

c. Organizational equipment.—The equipment of an organization is both general and special. The general equipment is that used in the general functions common to all military organizations, and the special equipment is that provided for the special functions of the unit. The special equipment of medical units is largely medical equipment, and it is described in detail in appendixes III, IV, and V.

(1) *Headquarters companies.*—The battalion headquarters companies and headquarters and service companies have no medical equipment. Their functions are administrative rather than concerned with the care of patients. The division medical supply sections of these companies carry a small rolling reserve of medical supplies for the entire division. The companies are equipped with motor transport and with special equipment required for its maintenance.

(2) *Collecting companies.*—The special equipment of a collecting company consists of a limited amount of tentage for the shelter of casualties; chests of instruments, medicines, dressings, blankets, and simple foods for the emergency care and treatment of the sick and injured; and litters upon which to transport those unable to walk. While this equipment is designed only for simple technical procedures, it is ample enough for the company to initiate combat and to furnish

replacements of dressings to battalion aid stations in its front until the division medical supply system can be placed in operation. The company has the necessary motor vehicles to transport its equipment.

(3) *Ambulance companies and platoons.*—Ambulance units have a supply of litters, blankets, and splints solely for property exchange. They have no unit medical equipment for their own use. Their special equipment consists largely of ambulances.

(4) *Clearing companies and platoons.*—The special equipment of clearing units includes tentage, cots, and chests of instruments, medicines, dressings, blankets, and foods for the temporary care and emergency treatment of the sick and injured. While the medical equipment of these units is somewhat more elaborate than that of collecting units, it is sufficiently simple to be readily transportable and too limited to provide for involved technical procedures. Motor transport is provided for personnel and equipment.

■ 51. INSTALLATIONS.—When a medical unit establishes its temporary installation for combat and is ready to function, it is said to be *at station*. The installation is designated generically as a *station*, and specifically by the function it performs; *e. g.*, aid station, established by sections of medical detachments; collecting station, ambulance station, and clearing station. A service station is established by the supply sections of the headquarters, or headquarters and service, company of the division medical unit. For the organization and functions of such stations, refer to the index and consult the paragraphs devoted to each type.

■ 52. DIVISION SURGEON.—*a. General.*—The senior officer of the Medical Corps assigned to a division is the division surgeon. The fact that this same officer is also the commander of the division medical unit must not be permitted to obscure the sharp distinction between his functions in the two capacities. As division surgeon he is a special staff officer of the division commander, and all his duties and responsibilities are staff functions. As commander of the division medical unit, his functions are exclusively those of command. He may not evade any of the responsibility of either status by relinquish-

ing one to devote his attention to the other; but he may delegate to assistants in both capacities authority to act in his name within the limitations he imposes. He is accounted for on the returns of the division medical unit.

b. Duties and responsibilities (also par. 10).—The duties and responsibilities of the division surgeon are—

(1) To keep the division commander and general staff group constantly informed as to the conditions and capabilities of the medical service, and to assist the division commander in the exercise of such of his command functions as pertain to the medical service.

(2) To keep the surgeon of the next higher echelon informed of the medical situation within the division.

(3) To elaborate the medical details necessary to carry the division commander's decisions into effect. This is medical planning. (See par. 21.)

(4) To initiate measures for the prevention or reduction of disability and death in the command. Such of these measures as involve command responsibility are initiated in recommendations to the division commander; but such as pertain only to technical procedures in the care and treatment of sick and injured may be initiated by direct instructions to the medical officers concerned. The scope of this responsibility includes—

(a) The prevention and control of communicable and deficiency diseases. (See FM 8-40.)

(b) Improvement of physical condition by any practicable measures.

(c) The prevention of nonbattle injuries. The records and experience of the medical service are most important guides to the reduction of this source of disability.

(d) The reduction of battle injuries and of the mortality resulting therefrom. This responsibility does not encroach upon the well defined responsibility of the chemical warfare officer for gas defense. Rather, it supplements it; and the surgeon must cooperate with him in reducing morbidity from toxic gases. In addition, the reduction of mortality in gassed patients is an exclusive responsibility of the surgeon. As regards other casualty-producing agents, both morbidity and

mortality from missiles sometimes may be influenced favorably by the initiation of preventive measures.

(5) To initiate measures for the prevention of disease among and the medical care and treatment of prisoners of war and inhabitants of occupied territory.

(6) To advise the division commander upon the training of all medical personnel in the division, and to prepare for his action programs for all aspects of medical training within the division.

(7) To procure, store temporarily, and distribute all medical supplies required by the division; to study the medical supply requirements and make suitable recommendations to the division commander concerning policies governing medical supply. (See par. 56.)

(8) To prepare and forward consolidated reports and returns of the sick and injured, and to furnish this information to other staff officers of the division who are concerned therewith.

(9) To make the necessary technical inspections for the division commander to insure that his instructions pertaining to the medical service, including the medical aspects of training, are being carried out.

c. Division surgeon's office.—(1) *General.*—The division surgeon's office consists of the commissioned and enlisted personnel provided to assist the senior medical officer of the division in his *staff* functions. It is not to be confused with the command post of the division medical unit. The personnel of the division surgeon's office are not a part of the division medical unit although, when circumstances permit, they may be attached thereto for quarters, rations, and general administration.

(2) *Location.*—The division surgeon's office is a part of and located with the rear echelon of division headquarters. This is not to say that the division surgeon's station is invariably in his office. Both his staff and command functions require his presence elsewhere during a large part of the time; and, especially during combat, he will be unable to discharge his responsibilities if he remains so far to the rear. Rather, this office is the administrative agency of the division surgeon, to be operated by one of his assistants at such times as the

duties of the division surgeon require him to be absent from the office.

(3) *Personnel.*—(a) *Commissioned personnel.*—The division surgeon is provided with one administrative and several technical assistants. While these assistants are selected because of special qualifications in each case, they are all available for any duties that the division surgeon may require of them.

1. *Assistant to division surgeon.*—This officer is a general administrative assistant. The division surgeon may employ him either as an executive assistant or in liaison with other sections of the division headquarters.
2. *Medical inspector.*—A specialist in field sanitation and epidemiology is provided to supervise, under the division surgeon, all functions of preventive medicine. For further details, see AR 40-270.
3. *Dental surgeon.*—The senior officer of the Dental Corps assigned to the division is the division dental surgeon. He is charged with direct supervision, under the division surgeon, of those functions that pertain to the dental service. He advises and assists the division surgeon in dental training, operations, and supply.
4. *Veterinarian.*—The senior officer of the Veterinary Corps assigned to the division is the division veterinarian. He is charged with direct supervision, under the division surgeon, of those functions that pertain to the veterinary service. He advises and assists the division surgeon in veterinary training, operations, and supply; and, in addition, he supervises veterinary sanitation and the inspection of forage and foods of animal origin. In those divisions not provided with a veterinary service, this assistant to the division surgeon is omitted.
5. *Orthopedist.*—A specialist in orthopedic surgery is provided to advise and assist the division surgeon in the prevention and care of disabilities within

this field, especially the prevention and treatment of foot injuries and the preparation of fractures for evacuation.

6. *Neuropsychiatrist*.—Mental diseases are particularly troublesome in armies. They account for a considerable proportion of infractions of discipline. A satisfactory soldier must be especially well adjusted to his environment, and maladjustments, so common in mental diseases, seriously impair or completely destroy a soldier's usefulness. Some mild cases escape detection upon mobilization. Other potential cases, inactive in a serene environment, become active under the stress and strain of modern warfare. To assist the division surgeon in dealing with this problem a specialist in mental diseases is provided to advise him upon mental hygiene and the detection of mental disorders.

7. *Urologist and medical chemical warfare officer*.—

While these two specialties are combined in one officer in Tables of Organization, the combination is not mandatory. It may be expedient, in certain instances, to give to another assistant the additional duty as medical chemical warfare officer. As division urologist, this officer advises and assists in the prevention and treatment of venereal diseases. If, as is customary, the control of venereal diseases is included in the duties of the medical inspector, the urologist will assist that officer in prevention. As medical chemical warfare officer, he advises and assists the division surgeon in the prevention and treatment of gas casualties. He should maintain close contact and cooperate with the division chemical warfare officer, who is a special staff officer of the division commander.

(b) *Enlisted personnel*.—Noncommissioned officers and privates are provided for technical and clerical assistance, and as messengers and orderlies.

■ 53. VETERINARY SERVICE.—*a. General.*—Veterinary service is a part of the medical service of cavalry divisions.

b. Veterinary units.—(1) *Functions.*—The combat functions of a division veterinary unit are to evacuate veterinary aid stations and clear the division of animal casualties. In other than combat situations, there is the additional function of temporary care of such disabled animals as will be fit for duty within a short time.

(2) *Collection and evacuation.*—The collecting elements of a division veterinary unit evacuate the regimental veterinary aid stations, and conduct the animal casualties to the division veterinary clearing station. They operate within their special field in a manner similar to the joint action of collecting and ambulance elements in the field of human casualties. There is, however, one notable difference: the veterinary collecting elements establish no veterinary collecting station. Animals are prepared for evacuation within the veterinary aid stations; and the responsibility of the veterinary collecting element is limited to the delivery of these animal casualties to the veterinary clearing station.

(3) *Clearing.*—The clearing element of a division veterinary unit establishes and operates a veterinary clearing station at which are concentrated the animal casualties of the division. Those requiring further evacuation are here transferred to a supporting veterinary unit of a higher echelon.

■ 54. REINFORCEMENT.—*a.* There would be an extravagant waste of means much of the time if auxiliary units were designed to carry peak loads. Medical units, like all auxiliary units, are designed to carry normal loads. The medical load varies widely with the situation; and when it becomes heavier than the designed capacity of the medical service, the commander is confronted with a choice between two courses of action: to operate his medical service at decreased efficiency or to reinforce it.

b. The source of reinforcements for the medical service may be within or without the division. The division medical service may be reinforced with units from higher echelons. The medical requirements should be considered when other aug-

mentation of division means, such as in artillery, is planned. In certain situations, and particularly in emergencies, it may be necessary to reinforce the medical service from sources within the division. This was done frequently in the World War. Some of these sources are prisoners of war, impressed civilians, and, as a last resort, other troops of the division.

■ 55. SUPPORT BY HIGHER ECHELONS.—*a. Sources.*—The army is the normal source of support of division medical services. For all practical purposes, the administrative responsibilities of the corps are limited to those in connection with corps troops.

b. Evacuation.—The responsibility of the division for evacuation terminates when casualties reach the division clearing station. Further evacuation is a responsibility of a higher echelon. Division clearing stations normally are evacuated by ambulances of the army medical service. Arrangements with the army for evacuation are made by the division through command channels. This is a G-4 function. The schedule may be arranged for evacuation at fixed hours; or it may provide for evacuation *on call* by the division.

c. Surgical hospitals.—(1) *Definition.*—Surgical hospitals are mobile army units, designed for the express purpose of supporting division medical services.

(2) *Functions.*—They furnish special facilities for immediate surgical aid to such casualties as require it; and they hospitalize all casualties whose condition is too serious to permit of further evacuation with safety. Such patients are known as nontransportables. In addition, when the division clearing station it is supporting must be moved, the surgical hospital may take over and care for all the casualties of the former until they can be evacuated.

(3) *Location.*—A surgical hospital is located as near as practicable to the division clearing station that it is to support. The ideal location is one in immediate proximity so that nontransportables may be removed from the clearing station to the surgical hospital by litter squads. Suitable buildings are to be preferred although the unit is equipped with tentage.

(4) *Establishment*.—A surgical hospital must retain its mobility until the situation has crystallized sufficiently to indicate its best location. It is established after the division clearing station is in operation, but before the necessity arises to move the clearing station.

(5) *Operation*.—A surgical hospital rarely is operated under division control. It may be operated under army control, or operation of surgical hospitals may be decentralized to corps.

■ 56. DIVISION MEDICAL SUPPLY.—*a. Responsibility*.—The division surgeon is, under the division commander, responsible for the medical supply of the division. The division medical supply officer is his assistant in direct charge of medical supply.

b. Organization for division medical supply.—(1) *Division medical supply officer*.—This officer serves in three distinct capacities:

(a) He commands the headquarters or headquarters and service company of the division medical unit.

(b) He is the unit supply officer of the division medical unit. In this capacity, he is a staff officer of the commander of the division medical unit. For his functions in connection with unit supply see paragraph 57.

(c) He is the medical supply officer of the division. In this capacity he is an assistant of and responsible only to the division surgeon. Within standing operating procedures and policies laid down by the division surgeon, he takes direct charge of the medical supply of the division, thus relieving his chief of the details incident to this function. He must look to the division surgeon, however, for basic decisions concerning medical supply.

(2) *Division medical supply section*.—In each headquarters or headquarters and service company of a division medical unit is a section charged with division medical supply. This section performs all functions associated with the procurement, storage, and distribution of medical supplies for the division. It is not to be confused with the unit supply section of the same company which is concerned only with the supply of the division medical unit. (See par. 57b.)

c. Procurement.—The division normally procures medical supplies from an army medical depot. They may be shipped to the railhead, or trucks of the division medical unit may be sent to the depot for them. One or both of two administrative procedures may be followed:

(1) *Formal or informal requisition.*—The division medical supply officer prepares, for the division surgeon, requisitions upon the proper depot.

(2) *By drawing against credits.*—Credits may be established in one or more depots for the division by higher authority. The division may then draw without further approval against such credits until they are exhausted or discontinued.

d. Storage.—Except in permanent or semipermanent camps, the division operates no medical depot. The medical supply section does, however, carry in vehicles a small rolling reserve of medical supplies against emergencies and to minimize the normal lag between requirement and distribution.

e. Distribution.—(1) *Service station.*—The service station is the principal distributing point for medical supplies. It is established by the division medical supply section of the headquarters or headquarters and service company of the division medical unit. It is located at a convenient site, usually adjacent to the clearing station in combat and in the bivouac of the division medical unit at other times. A medical dump is usually established at the service station, stocked initially from the rolling reserve. Other medical dumps may be established at collecting stations.

(2) *In other than combat situations.*—(a) *Requisitions by subordinate elements of division.*—Each unit supply officer submits requisitions for the medical supplies required by his unit (par. 34). This includes the unit supply officer of the division medical unit who, in one capacity, submits a requisition that he himself in another capacity will eventually fill. This is a paper transaction between the two supply sections of his company and is necessary because of differences in accountability between the two echelons of supply. The approval of requisitions is a command function. The division surgeon reviews all requisitions for medical supplies and makes appropriate recommendations to the division com-

mander. The latter may delegate his authority to the division surgeon to act upon such requisitions under such policies as he may lay down.

(b) *Accountability and responsibility.*—The division medical supply officer is accountable and responsible for no medical property other than the rolling reserve or that in his depot when established. Upon receipt of supplies from a depot he ships them to unit supply officers and drops them from his accountability. On the other hand, unit supply officers are accountable for all property issued to their respective units. It is this difference in property accounting that makes necessary the separation of unit supply from division medical supply within the headquarters or headquarters and service companies of division medical units. (See par. 57g.)

(c) *Delivery.*—Medical supplies may be delivered to unit trains at the railhead or at the service station, or they may be delivered to unit distributing points by vehicles of the division medical unit. Unit trucks may receive delivery at a medical depot.

(3) *In combat.*—The method of distribution of medical supplies in combat is most informal. Every consideration is subordinated to the objective of keeping medical units supplied. The division medical dump is established as soon as the clearing station is located. It is stocked initially with the rolling reserve. Auxiliary dumps may be established in the vicinities of collecting stations, or the stocks of collecting units may be augmented to enable them to supply forward units. Requests for supplies are sent to the rear by litter squads and ambulances; supplies are dispatched forward by trucks, ambulances, and litter squads. (See also par. 34 b and c.)

■ 57. SUPPLY OF DIVISION MEDICAL UNIT.—a. *General.*—For the distinction between supply of the division medical unit and division medical supply, see paragraph 56b(1).

b. *Organization for unit supply.*—In each headquarters or headquarters and service company of a division medical unit is a unit supply section. This section performs the functions associated exclusively with the supply of the division medical unit.

c. Scope of unit supply.—The division medical unit requires both general and special supplies. Special supplies are not limited to medical, but include items of supply furnished by other arms and services. (See FM 100-10.)

d. Procurement.—(1) *In other than combat situations.*—Except for items supplied automatically, the unit supply officer consolidates the supply requirements of the several companies, prepares the necessary requisitions, and forwards them through command channels. His requisitions for medical supplies eventually will reach the division medical supply section which he also heads; but his requisitions for supplies other than medical will be sent to the division supply officer of the arm or service concerned.

(2) *In combat.*—See paragraph 56e(3).

e. Storage.—The unit supply officer maintains no reserve stocks.

f. Distribution.—As soon as he receives supplies from any division supply agency, the unit supply officer issues them to the several companies in accordance with their previous requests. Delivery is made normally at the company bivouac.

g. Accountability and responsibility.—The unit supply officer as such is responsible for no property, although this same officer, *in his capacity of commander of the headquarters or headquarters and service company*, is responsible for all property issued to that company. On the other hand, the unit supply officer is *accountable* for all property issued to the division medical unit. He issues to the several companies on memorandum receipt only; and his is the only stock record account in the division medical unit. For further details see AR 35-6520.

■ 58. TRAINING.—*a. Responsibility.*—Training is a command responsibility. The commander of a medical unit is responsible for its training, and each commander of a subordinate element thereof is responsible for the training of his own command. The technical supervision of the training of attached medical personnel is a staff function of the division surgeon. It is the division commander who is responsible.

b. Planning.—The division commander prescribes general training objectives. Based upon these, training objectives for

the division medical unit are prescribed by the unit commander who issues general training directives or programs applicable to all subordinate elements. To assist in training, there is provided on his staff a plans and training officer. Upon receipt of the unit directive, each subordinate element commander prepares a detailed training program for his own command, and submits it to the unit commander for approval. As approved, such programs are placed in operation by the responsible officers. (See FM 21-5.)

c. General training objectives.—The general training objectives of a division medical unit are—

(1) To prepare each subordinate element to discharge all its functions in a satisfactory manner, and

(2) To assure that the division medical unit will operate as a coordinated whole in the accomplishment of its missions.

d. Conduct.—Each commander assisted by his staff or junior officers conducts the training of his own unit. Battalion commanders direct the training of their battalions and conduct such training as is given to the battalion as a whole. In the case of a medical regiment, the regimental commander conducts the combined training of the battalions. Combined training with the arms and other services is conducted by the commander designated in each case.

e. Scope.—(1) *General.*—Military training may conveniently be divided into basic military training, technical training, and tactical training. All three of these phases are included in the training of medical troops of the division and should be given concurrently.

(2) *Basic military training* is that primary training given to all recruits upon first entering the military service. Its scope is prescribed from time to time in training directives. (See MR 3-1.)

(3) *Technical training* of the medical soldier is both general and special. All medical soldiers regardless of their assignment must be trained in the elements of the care of sick and injured, including first aid, bandaging, splinting, and the transportation of the disabled with and without litters. According to the duties of the particular soldier, this training

is expanded to include the care, use, packing, and loading of equipment and special operations in the care and treatment of the sick and injured. Dental and veterinary personnel are trained in their special fields. Specialists are further trained in their specialties, such as in medical and surgical technique, sanitation, administration, and in the operation and maintenance of transport.

(4) *Tactical training* is largely unit training. It includes training in the functions of the unit and in cooperating with other medical units as well as with units of the arms and other services.

CHAPTER 5

COLLECTION

■ 59. DEFINITIONS.—*a.* Collection is the operation of removing casualties from aid stations, or directly from the field when necessary, to a collecting station and there preparing them for further evacuation. It should be noted that this preparation for further evacuation is an essential feature of collection.

b. A collecting station is a complete establishment of a collecting unit—complete in the sense of availability of all the normal facilities of a collecting station. Certain collecting units have duplicate sets of equipment permitting them to establish two complete stations. In the latter case the personnel available to operate each station is proportionately reduced.

c. A collecting post is a limited establishment operated by a detachment of a collecting unit and contains the necessary elements to prepare casualties for further evacuation, but with less elaborate degree than a collecting station.

■ 60. COLLECTING UNITS.—*a. Functions.*—A collecting unit has the following functions:

(1) *Combat function.*—The combat function of a collecting unit is to provide direct support of the attached medical personnel in its front. This support consists of the collection of casualties (see par. 59*a*); their sorting, emergency treatment, and transfer *at the collecting station or post* to the ambulance unit in support. In the case of collecting units which include ambulance platoons, this transfer of responsibility is made at the clearing station.

(2) *Supervision of sanitation.*—When not confronted with actual or impending combat functions, collecting units provide the personnel to assist in sanitary administration in the manner prescribed in paragraphs 5 and 6, AR 40-205. Ordinarily, the services of a collecting unit in this function are not required beyond the bounds of the division, corps, or army to which the unit is immediately assigned. The employment of collecting personnel in this function must not interfere with their training in the primary function in combat. Sanitation details are not police details; and the exercise of this function

is limited to duty as inspectors, demonstrators, and instructors in sanitation.

b. Functional organization.—For general organization see chapter 4. Each collecting unit is organized into a unit headquarters, collecting station section, liaison agents, and litter bearers. An ambulance subunit is included in certain collecting units.

(1) *Unit headquarters* consists of such commissioned and enlisted personnel as are required for the command and administration of the unit as a whole. It maintains at all times a small office for the administration and maintenance of the unit including the preparation of reports, returns, requisitions, and correspondence. The unit commander may detail his officers in addition to their other duties as follows:

(a) Supply officer, who is responsible for the procurement, storage, and distribution of all supplies and equipment.

(b) Mess officer, who is responsible for the procurement of rations and the operation of the unit mess.

(c) Transportation officer, who is responsible for the maintenance of the motor transport.

(2) Each *collecting station section* is charged with the establishment and operation of a collecting station. When at station this section is reenforced as necessary.

(3) *Liaison sections* are charged with the establishment and maintenance of liaison (contact) with the medical detachments attached to combat units in the zone of action covered by the collecting unit.

(4) *Litter bearers* carry litter cases to the collecting station from the aid station and, when necessary, from the field in rear of the battalion aid stations in their zones of action. They operate the unit's wheeled litter carriers whenever their use is practicable. They perform such first aid for casualties handled by them as may be necessary.

c. Supply.—See paragraph 57.

■ 61. COLLECTING UNIT COMMANDER.—*a. General.*—The senior officer of the Medical Corps present for duty with a collecting unit commands it. Collecting units are the critical elements of the division medical service; and commanders of these units must be able, alert, resourceful, courageous, and industrious.

b. Duties and responsibilities.—(1) Administration, discipline, morale, and training of the unit.

(2) Coordination of all activities of the unit.

(3) *In combat.*—(a) Disposition and employment of the subordinate elements of the unit.

(b) Liaison with units of attached medical personnel in the zone of action of the collecting unit.

(c) Keeping his immediate superior informed of the situation in his front.

c. Relations with other units.—(1) *Within the division medical service.*—In combat there must be close and harmonious cooperation between the collecting unit and the ambulance unit directly supporting it. The ambulance unit, however, must adapt its operations to those of the collecting unit except that the collecting unit must establish its stations near points accessible to ambulances.

(2) *Without division medical service.*—The collecting unit must base its dispositions and operations upon those of the combat elements in its front. Normally it removes casualties from aid stations; but, when attached medical personnel for any reason have been unable to remove all wounded from the field, the collecting unit must search and clear the field.

■ 62. MESSAGE CENTER.—*a. General.*—The message center is the nerve center of the unit. All official messages to and from the unit pass through the message center and are made of record. It is located at the unit CP, and marked with a conspicuous sign. The message center clerk is in direct charge of operation.

b. Equipment.—The essential equipment of a unit message center consists of—

- (1) A small table and stool.
- (2) Blank delivery lists.
- (3) Field message blanks.
- (4) Carbon paper, pencils.
- (5) Registration stamp and ink pad.
- (6) Blank message center registers (W. D., S. C. Form No. No. 1150).
- (7) Flashlight, lantern.
- (8) Time piece.

(9) Message center case (for equipment).

(10) Message center directing sign.

(11) A simple file for communications, delivery lists, and message center register sheets.

c. Special combat functions.—Message center personnel meet incoming litter bearers and walking wounded from the front, and ambulances from the rear, and ascertain by direct questions whether or not they are bearers of messages. Messages for the collecting unit are retained; those for units in front or in the rear are forwarded by the proper agencies.

d. Records.—The records of the message center should be complete. (See FM 101-10.)

■ 63. LOCATING COLLECTING STATION.—*a. General.*—The site of a collecting station is selected from a study of the terrain, roads, friendly and hostile troop dispositions, and the capabilities of the enemy. The governing element is the *mission* of a collecting unit: *the preparation of casualties for ambulance transportation* to the clearing station. Many patients arrive at a collecting station who have not been given adequate emergency treatment; but none should ever *leave* a collecting station with an inadequate dressing, a poorly splinted fracture, or lacking sufficient blankets to protect him from the weather. These functions cannot be discharged unless some degree of protection from enemy action is afforded; this consideration points to a site well to the rear. However, the difficulties in transporting patients on litters carried by hand, and the suffering of walking wounded, point to a site near the front. Selection of the site, then, becomes a compromise between these divergent considerations. The most important factor in determining the location for a collecting station is the position of the several aid stations supported by the unit. This requires a map study or reconnaissance of the belt of terrain some 500 yards to the rear of the line of departure or the main line of resistance in order to determine the location of aid stations and a knowledge of probable or actual battalion boundaries. The latter information frequently can be obtained in advance in the case of a prepared attack or a prepared defensive position. In a meeting engagement, such advance information of combat elements may not be available

but usually fairly accurate deductions may be made. In such situations, it may be advisable to order the collecting unit to a position in readiness initially, from which it can be rapidly advanced to the best position after the tactical situation has developed and the aid stations have been located.

b. Site requirements.—(1) The station should be located so as to obtain sufficient defilade from elevations of terrain for protection from direct small arms fire and from flat trajectory artillery fire. A distance beyond the effective range of hostile artillery fire renders the station useless. Properly located buildings, particularly those of brick, concrete, or stone construction, should be utilized. Cellars provide protection, and in stabilized situations dugouts may be constructed. Protection may also be obtained by concealment. Positions in woods or other localities which are not under direct enemy observation should be sought. (In this connection see par. 82*b* (4) (b).) A location in close proximity to bridges, fords, important crossroads, ammunition distributing points, battery positions, or other points likely to draw hostile artillery fire should be avoided.

(2) Every effort must be made to reduce to a minimum the distance of litter carry. The average should not be more than 1,500 yards, and each 100 yards that this average distance is reduced adds to the efficiency of casualty collection. A position somewhere near the center of a zone of action or sector will equalize the distances from the several aid stations and is desirable unless there are urgent reasons to the contrary.

(3) The site selected must be accessible to ambulances, although the station is not necessarily accessible at all times. Demolitions, other traffic, and enemy fire may prevent ambulances from reaching the station for varying periods, and in extreme situations, ambulances may be able to evacuate the station only at night.

(4) The site must be of sufficient size to permit systematic organization of the station and for the movement of ambulances and trucks. Considerable accumulations of wounded may occur for various reasons and there should be sufficient shelter and cover available while they are awaiting evacuation. The ground must be firm.

(5) A point which intercepts the greatest number of natural lines of drift of wounded is desirable. (See par. 12c.)

(6) Probable areas of casualty density must be considered. (See par. 12b.)

(7) The collecting station should not be located so far forward as to become involved in minor fluctuations of the line.

(8) An adequate water supply is desirable.

c. Average location.—The location of a collecting station will depend in each situation upon the terrain, road net, nature of the operation (attack, defense, etc.), and enemy capabilities. *No fixed rule can be laid down;* but the following approximations may be regarded as general guides:

(1) It should rarely be nearer than 1,200 yards to the front line.

(2) It should rarely be farther than 3,500 yards from the front line.

(3) Other things being equal, it should be near the center of its zone of action in a lateral direction.

(4) It should be on or near a road leading to the rear.

d. Reconnaissance.—(1) Depending upon the situation, the general area in which a collecting station is to be established may be prescribed by the commander of the division medical unit or by the commander of the collecting battalion; or the collecting unit may be given a mission order to support a specified combat element, in which case the unit commander may exercise full discretion. Before the collecting unit arrives in the general area, a reconnaissance should be made by the unit commander, whenever possible, to select the exact location of the collecting station.

(2) Upon arriving at his decision, the unit commander may send a messenger to guide the unit into position, or he may return and lead it in. In either case he should have a detailed plan for the lay-out of the station and the employment of the other elements of his unit by the time it arrives at the site selected.

(3) Whenever practicable, this reconnaissance is made jointly with the supporting ambulance unit commander. The views of the latter must be considered carefully, but the decision rests with the collecting unit commander.

■ 64. ESTABLISHING A COLLECTING STATION.—*a. Approach march.*—(1) *General.*—The advance of a collecting unit to its combat position will depend upon the nature of the operation, enemy capabilities, and the location of the unit at the time it receives its mission. Intervening, ordinarily, between the unit and its combat position is the bulk of the combat troops and their trains. These must have priority of movement. Thus an early and uninterrupted advance of a collecting unit to its combat position is not always assured. However, when early entry of collecting units into combat is imperative, this source of delay should be obviated by placing them in such positions prior to combat that their subsequent movements will not interfere with combat troops. In planned operations of large units, however, several hours are allotted for reconnaissances of commanders and staffs and for other necessary preliminaries to combat. During this period a collecting unit usually will be able to make its preparations and advance to its position without interfering with other elements.

(2) *Advance into position.*—The personnel of a collecting unit are moved into position whenever practicable by the ambulance unit designated to support. The train of the collecting unit follows in the column. The ambulances transport the collecting personnel to the site of the station, or as near thereto as the convoy may proceed in relative safety. Except when the ambulance unit is a subordinate element of the collecting unit, this movement is controlled by the ambulance unit commander. Collecting personnel are transported in ambulances both to save time and to start them off in their arduous duties in the best physical condition possible. The combat order for a collecting unit will prescribe the time of movement, the route, the ambulance unit (if any) to transport the personnel, entrucking, and (when known) detrucking points, the hour at which the collecting station will open, if necessary, and such other information as may be required.

b. Setting up the station.—(1) *Organization.*—The station is organized into the following departments: receiving, litter wounded, walking wounded, gas cases (when indicated), records, forwarding, kitchen, and the morgue. For a diagram of the organization and layout, see figure 3.

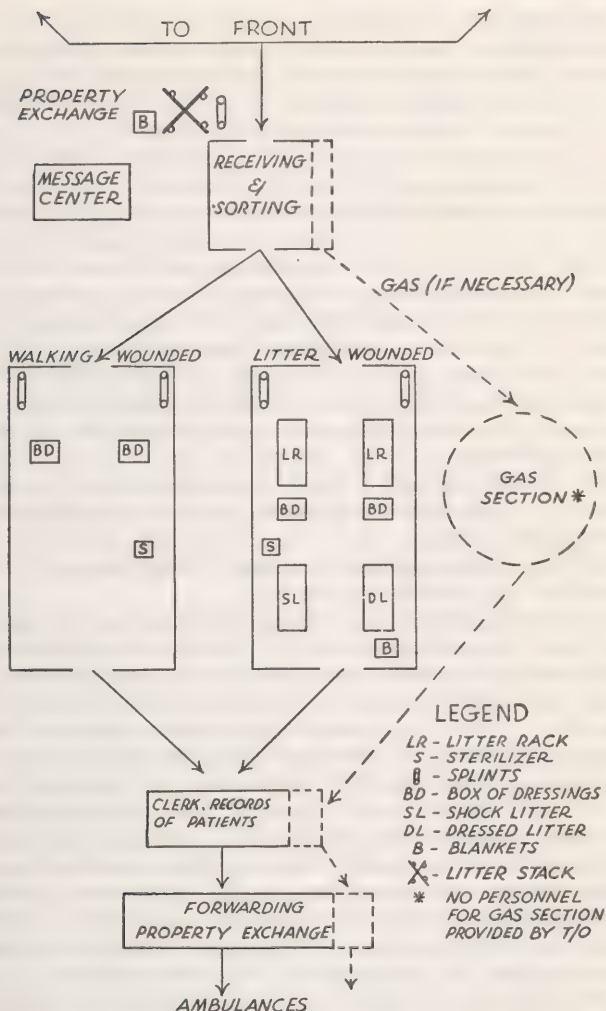


FIGURE 3.—One arrangement of collecting station. Arrangements vary with characteristics of site.

(2) *Allotment of tasks.*—(a) *General.*—All departments are established simultaneously. The platoon leader is in general charge; he is assisted by the platoon sergeant.

(b) *Kitchen.*—Mess sergeant, cooks, and cooks helpers.

(c) *Message center.*—Message center clerk.

(d) *Latrines.*—Truck chauffeurs may be used to dig latrines.

(3) *Procedure.*—(a) If the unit has been transported to the site by ambulances, it detrucks and forms. The packs of the men, except those in the litter platoons, are unslung and laid aside. The unit commander points out the positions for the headquarters and message center, the receiving, litter wounded, walking wounded, and forwarding departments of the station, the kitchen, morgue, motor park, latrines, and direction of water point; and indicates where the liaison personnel will report to him for orders, if its members have not already reported to the regimental and battalion surgeons.

(b) The officers and noncommissioned officers then take charge of their respective platoons, sections, and details, and establish the station.

(c) The trucks are driven to points most convenient for unloading and placing equipment.

(d) The litter bearers are marched to a nearby point affording some concealment and cover. Packs are unslung; and all equipment in excess of stripped packs is removed from the packs. Stripped packs with medical belts or pouches are then slung. The excess personal equipment is stacked. Litters are procured and stacked. The litter bearers fall out and remain in the immediate vicinity of the stacked litters.

(e) Under the immediate direction of the platoon sergeant, the reinforced collecting station section unloads the station equipment from the trucks. The litters are unloaded first and placed to one side convenient for use by the litter bearers. This detail may pitch the tents for litter and walking wounded. Each tent is then equipped by the enlisted personnel on duty therein, under the supervision of the platoon sergeant. Each man arranges and prepares for immediate use the equipment and supplies in accordance with his duty assignment.

(f) After they are unloaded, the platoon sergeant directs the distribution of blankets, litters, and splints to the receiving, litter wounded, and walking wounded departments.

(g) Personnel in the litter and walking wounded departments prepare for the reception of patients.

(h) The forwarding department is established.

(i) The clerk, recorder of patients, takes position prepared to make the necessary record of patients passing through the station.

(j) As soon as the platoon sergeant has personally inspected all departments of the station and ascertained that equipment and preparations are complete and satisfactory, he takes his post in the receiving department.

(k) Under the direction of the mess sergeant, the cooks and cooks helpers unload the equipment and supplies of the station kitchen, pitch the kitchen fly, and start the preparation of hot foods and drinks for patients. This kitchen does not feed the duty personnel. The unit kitchen should be located near but not in the collecting station.

(l) The message center clerk establishes the message center at a designated point, places the proper signs, and takes his post.

(m) As soon as trucks are unloaded, they are driven to a concealed park in the vicinity of the station.

(n) After the trucks are parked, the chauffeurs dig the latrines. As soon as they are finished, they return to the park and await further orders.

(4) *Improvements.*—If the station remain in one position several days, its organization, protection, and facilities are improved.

c. Directing signs.—Upon the establishment of a collecting station, plainly visible directing signs are posted at suitable points to mark the location of the station and the routes thereto. The area forward is adequately posted along the litter-bearer routes as far as the line of the aid stations. A large sign is prominently displayed in the vicinity of the station. (For a form, see fig. 4.) The posting and removal

of the station sign are the responsibility of the platoon sergeant. The posting and subsequent recovery of the Red Cross directing signs are the responsibility of the sergeant of the bearer element in whose zone of action these signs are posted.



(This sign may be painted on a suitable panel with the additional legend "To Collecting Station" or "To Clearing Station," or whatever the installation may be, and mounted on a post or tree or other object.)

FIGURE 4.—For signs pointing way to medical installations.

■ 65. OPERATING COLLECTING STATION.—*a. General.*—The material in this paragraph is to be construed merely as a general guide to the operation of a collecting station. The functions discussed herein must be discharged in every situation; but circumstances may require some modification of the manner in which they are discharged.

b. Receiving department.—All cases enter the station through this department. A supply of blankets, litters, and splints is maintained for exchange with litter bearers. Each patient is examined and classified either as a walking wounded or a litter wounded. Experience has shown that roughly 50 percent of all cases received will fall into each of these classes. If gas is used, a further classification must be made to separate gassed patients from all others. As soon as a patient is classified in this department, he is sent to the proper department for emergency treatment and preparation for further evacuation.

c. Litter wounded department.—(1) In general, litter wounded will require more attention than walking wounded, although a relatively slight injury to a foot may prevent a patient from walking and this department is organized accordingly. If the personnel is available, this department should be manned by two medical officers and five enlisted men. Of the latter, there is one noncommissioned officer in

general charge; one enlisted man in charge of sterilization and the administration of hypodermic medication, including sera; one enlisted man in charge of shock litters; one in charge of dressed litters; and two (technicians) to assist the medical officers.

(2) Two dressing tables are operated, one by each medical officer and his assistant. Dressings and splints are placed conveniently. Only the simplest and most necessary operative procedures are undertaken. Tourniquets must be removed and hemorrhage stopped if possible before the patient is evacuated.

(3) A section of the litter wounded department is devoted to the treatment of traumatic shock. A shock litter is prepared by placing an ordinary litter on a litter rack with blankets so arranged as to inclose the space beneath the litter, in which are placed lanterns. When lighted, these lanterns provide heat to a patient placed on the litter. Additional heat may be provided with blankets and the judicious use of hot water bottles.

(4) Working to the rear of the dressing tables is an enlisted man charged with sterilizing instruments and administering hypodermic medication. An important duty of this man is to examine the emergency medical tag of each patient and, if the administration of any serum is routine, to determine whether or not it has been administered previously; and, if it has not already been administered, to give the patient the prescribed dose, making a proper notation of his action. He administers other hypodermic medication at the direction of a medical officer and makes the proper notations of such action.

(5) Several litters are *dressed* with blankets to be available without delay when needed. For the method of dressing a litter, see FM 8-35.

d. Walking wounded department.—This department is operated similarly to the litter wounded department except that no provisions are made for the treatment of shock and no dressed litters are maintained. One medical officer with enlisted assistants usually operates this department.

e. Gas department.—If gas is used by the enemy, special provision must be made at the collecting station for gassed cases. They must not be mixed with other patients, and they

usually require special treatment. While these cases must receive treatment at the collecting station, the meager equipment and limited personnel will not permit of more than the minimum of ameliorative measures being taken. Degassing of mustard cases and suspected mustard cases is undertaken when practicable. In good weather, this department should be operated in the open. Personnel must observe protective measures. If gas casualties are numerous, collecting units must be reinforced to afford proper care to such cases. Specially trained personnel and suitable equipment should be provided.

f. Record department.—A clerk, recorder of patients, keeps a numerical record of all patients received at the collecting station, classified as indicated in FM 8-45. A report is submitted through the message center to the next higher headquarters at such intervals as may be directed, usually every 4, 6, or 12 hours, depending upon the situation.

g. Forwarding department.—(1) As soon as the treatment of each patient is completed, he is removed to the forwarding department. Although not separated by any great distance, to facilitate the loading of ambulances, walking wounded are kept apart from litter wounded in this department. While awaiting evacuation, patients, especially the seriously sick and injured, must be provided with some shelter if the weather is cold or inclement.

(2) The enlisted man in charge of the forwarding department directs the loading of ambulances, checks the exchange of property, and separates the patients into those who are to be evacuated and those who are to be returned to their organizations. The latter he turns over to the military police, or disposes of in accordance with special instructions. The former he classifies as shown below, and sees that ambulances are loaded accordingly:

(a) Those who must be transported in a recumbent position. These are not to be confused with litter wounded, since certain litter wounded may be transportable in a sitting position.

(b) Those who may be transported in a sitting position.

(c) Those who must be transported apart from others, such as gassed patients and those with contagious diseases.

(3) The equipment of évacuées may accompany them, or may be disposed of at a salvage dump established at the collecting station. This is determined by policies established by the division commander.

(4) The loading of ambulances is controlled by the collecting unit. All ambulances are loaded to capacity when evacuation is heavy. Except in emergencies, ambulances are held at the forwarding department until a full load is assembled.

h. Kitchen.—When the station is opened, the cooks immediately prepare an adequate supply of hot coffee, cocoa, or soups for cases awaiting treatment or evacuation.

i. Morgue.—This is merely a place, out of the sight of the wounded, where those who die at the station are placed until they can be properly disposed of by the agency responsible for burial.

■ 66. LIAISON SECTION.—*a. Responsibility for liaison.*—In the medical service the responsibility for maintaining contact between two medical units lies with the unit to the rear. Although regimental and battalion surgeons have a duty in this connection (par. 39b), the responsibility for establishing and maintaining contact between attached medical personnel and the collecting unit in support lies with the latter. To discharge this duty there is, in each collecting unit, a liaison section composed of contact agents.

b. Duties of contact agents.—The basic functions of contact agents (*c* below) are—

(1) To locate all infantry aid stations in the collecting company's assigned area of responsibility. Contact agents are not usually assigned to artillery units. (See par. 67k.)

(2) To return to the collecting station and guide the litter bearers forward to the aid stations.

(3) Afterward, to remain at their respective aid stations and there act as contact or liaison agents for their unit, sending back to the unit commander all the useful information they can obtain.

c. Establishing contact.—Contact is established in one of two different ways:

(1) *Collecting station to aid station.*—The contact agents remain with the collecting unit until the site for the collecting

station has been fixed. Then, while the station is being established, the contact agents are sent forward to locate the aid stations.

(2) *Aid station to collecting station.*—The contact agents are sent to locate the aid stations before the establishment of the collecting station has been started. This may be done either by attaching a contact agent to each battalion medical section before it enters combat, so that the contact agent accompanies it into position, or by dispatching the contact agents forward after the battalion sections are in position but while the collecting unit is still in a position in readiness. When this method is employed contact agents must be informed of the general area in which the collecting station will be located. The choice of methods will depend upon the situation; elimination of delay is the guiding consideration.

d. Instructions to contact agents.—When contact agents are not attached to battalion sections prior to combat, but are dispatched forward by the collecting unit commander, their instructions must include the following:

- (1) Direction of the enemy.
- (2) Boundaries of the zone of responsibility of the collecting unit, shown both on the ground and on the map.
- (3) Designation of the unit, or units, to which the contact agent is being sent.
- (4) Location of such unit, or units, if known.
- (5) General route to be followed.
- (6) Any information to be transmitted to the regimental or battalion surgeon to whom the contact agent will report, such as the location of the collecting station and when litter squads may be expected to arrive at the aid station.

e. Local distribution of contact agents.—When two or more contact agents are being dispatched to a combat regiment, all should report initially to the regimental surgeon so that he may distribute them according to the plans for the employment of the regiment.

f. Failure of a contact agent to report.—If a contact agent sent to locate an aid station does not report back to the collecting station at the proper time, another contact agent or other soldier capable of performing the duty must be sent. Liaison must be established and maintained.

g. Contact agents at aid stations.—Contact agents must not only be intelligent and highly trained but must exhibit initiative and have a keen sense of the importance of their duties and the responsibilities of their position if they are to be of any value to their commanding officer and to the medical service. They are there to obtain early and reliable information, and they must get it and transmit it. Their duties are to keep the collecting unit commander constantly informed of—

(1) A change or contemplated change in the location of the aid station.

(2) The prevailing type of wounds or gas casualties.

(3) The number of wounded and whether increasing or decreasing.

(4) The progress of the regiment or battalion to which attached.

(5) Enemy counterattacks of new infantry units engaged or about to engage as communicated to the contact agent by the regimental or battalion surgeon, and any other information pertinent to the military situation if it concerns the collecting unit.

h. Agencies for transmitting information.—(1) The agencies available to contact agents for transmitting their information to the collecting station are usually limited to returning litter bearers, walking wounded (unreliable, but used when necessary), ambulances arriving at the aid station or a nearby loading post, and the telephone, when available.

(2) Messages of special importance are sent in duplicate by two different agents. One message is marked "Duplicate."

(3) Sketches are sent when they supplement a written message or better explain a certain situation than does a message.

(4) Each contact agent is provided with a field message book and pencils.

■ 67. LITTER BEARERS.—*a. Task.*—The assembling* of litter wounded at a collecting station is a slow operation. The time required to evacuate aid stations of their litter wounded is a function of three variables: the number of litter wounded, the number of litter bearers, and the time required to make the

trip between the aid station and the collecting station. Distance is no accurate index of this time, since difficulties may alter the usual relationship between time and space. Where—

W is the number of litter wounded;

t is the time required for one round trip of a litter squad;

S is the number of litter squads; and

T is the total time required to move all litter wounded;

the general formulas are—

$$(1) \quad T = \frac{W \times t}{S}$$

$$(2) \quad S = \frac{W \times t}{T}$$

which is to say in (1) that the total time required to evacuate a given number of litter cases depends upon the time for each patient and the number of squads employed; and in (2) that the number of squads required to evacuate a given number of wounded in a prescribed time depends upon the time required to evacuate each case.

b. Factors tending to retard collection rate.—(1) Poorly trained or ill-disciplined litter bearers.

(2) Night collection. (See *g* below.)

(3) Casualties scattered over field instead of being assembled at aid stations. (See *f*(1) below.)

(4) Inclement weather; difficult terrain, such as mud, rough undergrowth, etc.

(5) Enemy fire and gas.

(6) Enemy counterattacks.

(7) Long litter carriage.

(8) Fatigue of litter bearers. During hard fighting, fresh litter bearers can be expected to work the first 20 to 24 hours with but little rest. Thereafter they should be relieved and rested every 12 hours.

(9) Casualties sustained by litter bearers.

c. Measures for increasing the rate of collection.—(1) *Use of wheeled litter carriers.*—A wheeled litter carrier is a light collapsible, two-wheeled, rubber-tired, hand-propelled vehicle which will transport one patient on a litter. Each carrier is operated by two bearers. Each collecting unit is equipped with wheeled litter carriers. They should be allotted to bearer

elements according to numbers of patients to be transported, distances to be traversed, and suitability of terrain. By establishing relay posts, carriers may be used for parts of the distance, substituting carriage by hand over stretches not suited to their use.

(2) *Forward displacement of the collecting station.*—An aid station is not located for convenience to the collecting station. The location of the latter must conform to the movements of the former. While it is true that the movement of a completely established collecting station entails considerable effort and is to be avoided unless necessary, the reduction in capacity of litter bearers may outweigh the advantages of retaining a collecting station site. When this point is reached the station should be moved forward to decrease the distances that patients must be transported by bearers.

(3) *Use of advanced ambulance loading posts* (par. 76a (5)).—Advanced ambulance loading posts should be used whenever practicable and the situation permits. In some situations they may be used during the hours of darkness when their daytime use is impossible. An advanced ambulance loading post is established by the ambulance unit upon the request of the collecting unit. In the event that the ambulance unit commander disagrees as to the practicability of operating ambulances in advance of the collecting station, the decision is made by the next higher echelon commander, normally the commander of the division medical unit.

(4) *Reinforcement with personnel from collecting unit in reserve.*—If there be in reserve a collecting unit whose employment in the near future is not contemplated, individual personnel or subordinate elements may be detached therefrom to reinforce a collecting unit in action. The relative expediency of this course and that discussed in (5) below must be carefully considered. It may be advantageous to relieve an exhausted company with a fresh one, placing the former in reserve to recuperate.

(5) *Leapfrogging with another collecting unit.*—This procedure consists in placing an unengaged unit in action to establish a new collecting station farther forward, closing the old station when the new is in operation. Though not always

practicable, this procedure is most useful in certain situations. A typical situation in which its use is indicated is to be found in a successful attack by combat teams in column.

(6) *Use of prisoners of war.*—When available, prisoners of war can be used to advantage in the collection and litter transportation of battle casualties. They are assigned to this service through division or brigade headquarters. In times of stress they may be held temporarily at collecting stations. Those so assigned to a collecting unit work under the unit commander. At the collecting station they are employed as litter bearers and for general utility. When employed on litter-bearer routes from the aid stations, they are worked under guard.

(7) *Reenforcement from medical units of higher echelons.*—See paragraph 54.

(8) *Reenforcement from other troops of the division.*—See paragraph 54.

d. Litter squads in extended order.—For a detailed discussion of extended order see FM 22-5. The bulk of the work of litter squads is not done in formation, but formations are necessary in the advance to aid stations and in clearing areas of wounded that have not been taken to aid stations. Such formations reduce casualties in litter squads, promote control, and insure a thorough search of the field. All distances and intervals shown in figure 5 are approximate, and are intended only as guides.

(1) *Column of litter squads.*—This formation facilitates control or change of direction and presents the smallest possible frontage to direct enemy fire. It is most frequently used in advancing to a definite objective, usually an aid station, over terrain subject to hostile observation and fire, or in following a concealed route, as a draw or ravine. A distance of 50 yards between litter squads in the column is usually adequate. The platoon sergeant marches at the head of the column. The section leaders march where they can best control their sections.

(2) *Line of litter squads.*—This formation finds its greatest usefulness in searching and clearing the field of wounded after combat. At night, in close, rough, and wooded country, the interval between litter squads must be less than on open

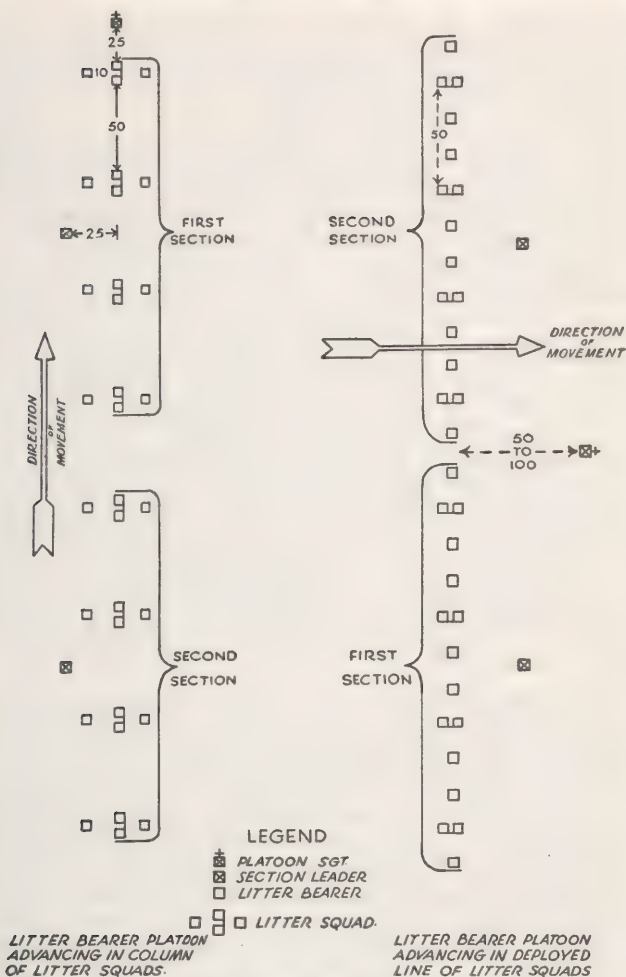


FIGURE 5.—Extended order formations of litter bearers.

and flat terrain. The platoon sergeant marches well in advance of the center of the platoon so that he may be the first to arrive in new territory, make his decisions, and transmit his orders to his section leaders.

(3) *Line of section columns.*—This formation is sometimes useful in crossing dangerous areas or in approaching woods in order to provide quick concealment and at the same time present an inconspicuous target. A distance of 50 yards between litter squads in the column is usually adequate.

e. Advance to and clearing of aid stations.—(1) *Prior to advance.*—Litter bearers are usually not dispatched until the locations of the aid stations are definitely known. While awaiting the return of the contact agents, the situation so far as known is carefully explained to the platoon sergeants and section leaders. As the exact locations of aid stations are learned, they are plotted on maps or sketches. Apparent loss of time, occasioned by holding the bearer platoons at the collecting station until positive information of aid station positions is obtained, is fully repaid in diminished loss of personnel, fewer chances of going astray, and in a better organization of the bearer service. Although the platoon or section may be accompanied by the contact agent, the platoon sergeant or section leader must understand where he is going and how he is going to get there before being permitted to start.

(2) *Advance.*—Over favorable terrain, it is usually feasible to leave the collecting station personnel in column of litter squads closed up. This formation is retained as long as it is safe, but as dangerous areas are approached the distance between litter squads is increased as may be necessary in order to avoid unnecessary losses. Actively shelled areas are avoided whenever practicable. Advantage is taken of terrain features to secure cover from fire, and particularly concealment from hostile observation. If the litter carry is 1,000 yards or more, a litter relay post is established at a selected point, and the necessary number of squads left to man it. (See *h* below.)

(3) *Evacuation.*—When the aid station is reached, evacuation begins at once, all litter cases being carried back to a litter relay post, the collecting station, or an advanced ambulance loading post. With occasional rests, the litter bearers

ply continuously back and forth between these points and the aid stations until all wounded have been evacuated, or until the bearers have been relieved. It is essential that aid stations be cleared as rapidly as possible, not only that the wounded may reach a place of definitive treatment with the least practicable delay but, from a broader point of view, it is essential that the wounded be removed from the sight of the combatant troops. (See par. 2a(2).) It occasionally happens that the wounded lying to the rear of the aid stations must be temporarily neglected in order that the steady flow of wounded from the aid stations be not interrupted.

f. Clearing field of wounded.—(1) When, in addition to removing the wounded from aid stations, the bearer platoons must also search and clear certain areas, their task is greatly increased and collection is thereby retarded. If casualties be numerous, reinforcement may be necessary. Such a situation may arise when combat troops have advanced some distance, necessitating corresponding advance and successive re-establishment of aid stations. It may occur in hard fighting without advance of the aid stations, the medical detachments being unable to cope with their tasks. Or it may arise in an interval between attack and counterattack when the opportunity must be seized to remove all wounded.

(2) When the field is to be cleared by the bearer platoons, they are assigned zones of action. Boundaries are designated by conspicuous landmarks, such as buildings, roads, streams, fences, isolated trees, or woods. The platoon or section forms in a deployed line of litter squads, using such intervals as may be indicated by the nature of the terrain and systematically searching all the ground as it advances. The effectiveness of the search is increased in each squad by having the numbers 1 and 4 move 10 to 25 yards on each side of the litter. Upon finding a wounded man, he is removed to the central axis and the search is resumed where he was found. The central axis should be a well marked, easily distinguishable feature, such as a road or fence. This central axis is finally cleared to the collecting station by ambulance if practicable; otherwise by litter or wheeled litter carrier. It is sometimes desirable to evacuate wounded as found to a litter relay post.

g. Clearing field of wounded at night.—(1) This is frequently necessary, and in dark nights on strange terrain is attended by great difficulties, the most serious of which are—

(a) Loss of control of litter bearers.

(b) Inability to find all wounded, especially the most seriously wounded, or uncertainty whether all wounded have been found.

(c) Difficulty in resuming search where last patient was found.

(d) Difficulty in maintaining proper direction of search.

(2) Measures which facilitate night collection are as follows:

(a) If possible the clearing of the field should be initiated before it has become quite dark. If this cannot be done, a reconnaissance of the area to be searched by the officers and noncommissioned officers who are to direct the work of the bearers is advisable even though hasty. Prominent and easily recognized and followed landmarks are to be noted in this reconnaissance.

(b) Disciplined bearer units thoroughly trained in night exercises, and the use of the luminous compass.

(c) Detailed organization of the bearer service, and a carefully worked out plan for the assigned task.

(d) Avoidance of dispersion of bearers until area to be cleared has been reached.

(e) Assignment of limited zones of action to subunits marked by easily recognized boundaries, such as roads, buildings, fences, streams, railroads, edges of woods.

(f) Material reduction of intervals depending on the character of the terrain and the degree of darkness.

(g) Reduction of distances with reference to litter relay posts, central axes to which patients are carried, and advanced ambulance loading posts.

(h) Close contact and control by section sergeants including periodical reporting of bearers at local command posts.

(i) A white band (wide bandage) around each bearer.

(j) One member of each squad to remain at the point where the last patient was found to mark the place.

(k) Assignment of guides to bearer platoons brought up from the rear after dark.

(3) The evacuation of aid stations at night is less difficult after the stations have been located. The best evacuation routes to the collecting station are selected. Frequently, desirable routes can be taken at night, the use of which in the daytime is impossible. Distances between litter relay posts may be somewhat reduced.

(4) If the military situation permits of lights being used, the problem of night evacuation of wounded is simplified.

h. Litter relay posts.—(1) Litter relay posts are established as required, usually about every 600 yards. Over good terrain the distance between relay posts can be increased several hundred yards. The relay posts are on the litter bearer routes which extend from the aid station back to the collecting station or any other point at which wheeled litter carriers, light railway, or ambulances can take over the patient. It is uneconomical and unnecessary to locate wheeled litter-carrier relay posts as close together as are litter relay posts. In favorable situations, it may be practicable to cover the entire distance between an aid station and the collecting station with wheeled litter carriers. In other instances their use will be more restricted, forming only a link in one or more evacuation routes.

(2) *Points selected.*—So far as practicable, litter relay posts are so spaced that all bearers in the chain of evacuation are kept approximately equally occupied. The relay posts should be definitely organized, affording shelter during inclement weather, some security from hostile fire, a small reserve of blankets, litters and splints, and a place for storing food. Frequently shell holes, dugouts, or trenches can be used.

(3) *Personnel.*—The strength of a relay post will vary. Occasionally as many as 24 bearers are assigned.

(4) *Operation.*—The operation is simple. Posts are numbered from front to rear. A bearer squad with patient arrives from an aid station at post No. 1; turns its patient over to a bearer squad at post No. 1 without removing him from the litter; takes a litter from the stack and returns at once to the aid station. In the meantime, a bearer squad from post No. 1 carries the patient to relay post No. 2 or to the collecting station as the case may be. The organization of the relay post system varies according to the situation. One line of

relay posts may be established to each aid station being evacuated, all converging at the collecting station; or, as is more frequently the case, especially if the front be not wide, the chain may run forward to No. 1 post which is centrally located in the rear of and close to the aid stations, and all wounded are evacuated from the aid stations to No. 1 relay post, and thence back through the relay route. Each situation must be studied with a view to the simplest, most rapid and economical removal of litter patients from the aid stations to the collecting station.

i. Officer commanding litter-bearer platoons.—An officer under the company commander is responsible for organizing and operating the litter bearer service during combat. When necessary, he leads the bearer platoons forward and makes the initial dispositions. He establishes his command post normally at the collecting station or at a litter relay post from which he can best control and coordinate collection in the company zone of action. He goes, however, wherever his services may be required. He informs the platoon sergeants of his position and keeps in communication with them. He keeps the company commander constantly informed of the situation and makes timely requests for reinforcements or relief of his bearer platoons.

j. Platoon sergeant.—The platoon sergeant receives his orders during combat from the officer commanding the litter bearers. He goes forward with his sections and personally sees that they reach the aid station or stations, or other objective, and gets evacuation under way at once. He organizes litter relay posts as directed and supervises the work of his platoon. He takes post at a point from which he can best control the functioning of his platoon. This may be at a relay post or a point where the evacuation routes of his two sections converge. He maintains close contact with the section leaders at all times and keeps his commanding officer constantly informed of the situation in his platoon and zone of action.

k. Collection of artillery casualties.—Collecting units rarely establish contact with the aid stations of artillery units for the following reasons: casualties among artillery personnel are normally less than in infantry units, and the attached

medical personnel of artillery units are able to prepare their casualties for evacuation to the clearing station; ambulances ordinarily can reach artillery aid stations with safety; and the medical detachments of almost every artillery unit are equipped organically with ambulances. Consequently, artillery casualties normally are evacuated directly from aid stations, either upon request to the division ambulance unit operating in the area or by the organic ambulances of their own medical detachments. (See par. 45*d*.)

■ 68. CLOSING COLLECTING STATIONS.—The procedure of closing the collecting station is practically the reverse of its establishment, except that in closing the station the bearer platoons do not participate.

a. All patients are evacuated.

b. The personnel of each department packs its own equipment.

c. The truck drivers bring their trucks to the designated loading positions.

d. The collecting station personnel strike and fold the tents.

e. The collecting station personnel load the station's equipment trucks.

f. Directed by the mess sergeant, the cooks and their helpers load the kitchen supplies.

g. The loaded trucks take their march position.

h. The unit forms in skirmish line and polices the area it has occupied. Upon the completion of this duty the unit falls in (with bearer platoons if they are to move with the company) and, if shelter tents were pitched, strikes them, slings equipment, and forms for route march.

i. Latrines are closed and marked by the truck drivers.

j. The commanding officer makes a personal inspection of the area.

■ 69. FORWARD DISPLACEMENT OF COLLECTING STATION.—*a.* When warranted by the tactical situation, the forward displacement of a collecting unit at station by bringing the station closer to the majority of wounded and shortening litter carriage is an effective means of facilitating casualty collection. The collecting unit must keep close, effective contact

with the front line troops in its zone of action or sector, the station being located close enough to the line of aid stations to make litter carriage as short as possible but not so exposed that the work of the station cannot be carried on. It must be recognized that litter bearers may properly be exposed to enemy fire to a greater extent than is practicable for the station itself. When in the opinion of the unit commander the station should be advanced, he makes the recommendation to the proper authority. The station is advanced only on orders of competent authority.

b. Forward displacement is indicated—

(1) During a successful attack, when the litter carry has become unduly long.

(2) When the enemy has abandoned the field, and the number of casualties and their distribution warrant a reestablishment of the collecting station.

c. Forward displacement is not indicated—

(1) When the advance is only a temporary fluctuation in the course of the battle.

(2) When the station in a more advanced position would be rendered useless by the enemy fire.

d. Important obstacles in effecting forward displacements are—

(1) Enemy artillery fire.

(2) Destroyed or impassable roads.

(3) Congested roads or roads reserved for the advance or relief of combatant troops.

(4) Darkness.

e. Procedure.—(1) The collecting unit commander, accompanied if possible by the ambulance unit commander concerned, makes a reconnaissance of the route or routes forward and of the vicinity in which the collecting station is to be reopened.

(2) The officer directing the litter bearer service is informed of the new location for the station and the hour at which the movement of patients thereto is to start. He regroups his bearer service to meet the new situation.

(3) Medical supplies are replenished as necessary.

(4) Aid stations are notified by field messages of the location of the new station and when it will open.

- (5) The station is cleared of any accumulation of wounded.
- (6) Equipment and supplies are packed and loaded.
- (7) The advance to the new site is made at the hour and by the route prescribed in the order from the battalion.
- (8) The proper authority is informed as soon as the new station is opened.
- (9) Ordinarily one truck and the equipment and personnel of the walking wounded department should remain at the old site until everyone concerned has been notified of the movement forward and the establishment of the new station.

■ 70. DIVIDING COLLECTING UNIT FOR TACTICAL EMPLOYMENT.—

a. The collecting station equipment is so made up and carried that the company can be divided into two approximately equal parts, each one of which is able to function on a limited scale as a collecting unit in combat.

b. Occasions which may make such a division of the company desirable or necessary are—

(1) When a force on a detached mission does not require a complete collecting company, or for which a complete company cannot be spared.

(2) When a force is fighting on an extended front against a weak enemy, in a delaying action, or is holding defensively a wide front.

(3) When one or more terrain features divides the zone of action into two areas more or less inaccessible to each other.

(4) When only part of a collecting company is required for an advance, flank, or rear guard.

c. The company is so divided that each half contains its proportionate share of officers, equipment, and the functioning subunits of the company.

■ 71. RELIEF OF COLLECTING UNIT AT STATION.—*a.* When a collecting unit at station is to be relieved, orders are issued designating the organization for the relief, the date and hour the relief is to be completed, route by which the relieving unit will approach the station, and the elements of the old unit to remain in the area for the guidance of the new. Guides are detailed to meet the new unit. This is especially necessary in night reliefs.

b. Upon receipt of the order, the commander of the relieving unit or an officer designated by him proceeds to the unit he is to relieve for arrangement of details and a thorough reconnaissance of the entire area covered by the unit he is relieving. He takes over all maps of the sector and all property which is to be exchanged. He familiarizes himself with all sector orders. He must note especially the following important points:

- (1) Location of all aid stations and the routes thereto.
- (2) Location of each relay post and advanced ambulance loading posts (if any).
- (3) Wheeled litter-carrier routes.
- (4) Location of the ambulance station.
- (5) Source of water supply and purity of the water.
- (6) Source of fuel.
- (7) Characteristics of enemy fire and his habits relative to the use of gas.
- (8) Areas which come under enemy observation.

c. The relief of the litter bearers conforms to the methods governing such operations. No relief should be carried out without leaving important elements of each section being relieved in position to aid the incoming litter bearers during the first few hours. The men so left are used in giving information of the area and in guiding groups from place to place until the new personnel are thoroughly familiar with the terrain and the peculiarities of the enemy artillery on this portion of the front.

CHAPTER 6

DIVISION AMBULANCES

■ 72. **FUNCTIONS.**—*a. General.*—The ambulances of the division medical unit furnish the transportation, described below, within the division area. They are not employed normally to evacuate casualties *from* the division; this is a function of ambulance units of higher echelons. Nor must the ambulances of the division medical unit be confused with those assigned to the medical detachments of certain other elements of the division, notably artillery.

b. In other than combat situations.—The transportation of evacuees from dispensaries to the agency designated to receive the patients of the division.

c. In combat.—(1) *Primary.*—(a) The transportation of evacuees from collecting stations (and occasionally certain aid stations, see par. 67*k*) to the clearing station.

(b) The transportation of litter wounded from advanced ambulance loading posts to collecting stations.

(c) Emergency care and treatment of sick and injured *en route*.

(2) *Secondary.*—(a) The transmission of messages from one medical unit to another along the assigned routes of evacuation.

(b) The transportation of medical supplies from the division medical dump to units farther forward.

(c) The transportation of medical personnel, particularly of collecting units, to and from battle stations.

■ 73. **CONTROL.**—*a. General.*—In one type of division medical unit, ambulances are controlled by ambulance unit commanders. In the other type, they are controlled by collecting unit commanders. In either case each major ambulance element is commanded by an officer of the Medical Corps, and the general principles of control and operation are the same.

b. Orders to ambulance elements may specify the exact route or routes to be used, or they may list certain available routes and leave the final selection to the discretion of the

ambulance commander. In either event the ambulance commander must be informed of all traffic restrictions that may affect his operations.

c. Reconnaissance.—Whenever practicable, ambulance commanders should reconnoiter all routes available or likely to become available within their zones of operation. Such reconnaissance is not alone for the purpose of selecting or familiarizing themselves with initial routes, but also for securing information of alternate routes in the event that changes in the situation may indicate or require the abandonment of the initial route.

d. The ambulance plan should include—

- (1) The initial ambulance route and possible alternate routes.
- (2) Locations of the ambulance station, of relay posts, of traffic posts, and of advanced ambulance loading posts.
- (3) Distribution of ambulances among tasks and among the several posts.
- (4) Provisions for supply and maintenance of vehicles.
- (5) Provisions for relief and messing of personnel.

■ 74. **AMBULANCE ROUTES.**—The following considerations govern the selection of ambulance routes:

- a. Availability.*
- b. Physical characteristics*, such as the surface, width, and grades of roads, and the practicability of cross-country routes.
- c. Other traffic* on same routes or portions thereof.
- d. Relative length*, compared with other possible routes.
- e. Proximity* to terrain features or installations that may draw enemy fire, or including intersections likely to be interdicted.
- f. General protection* from enemy observation and fire.
- g. Cover* for concealment of movement or for ambulances at rest.

■ 75. **AMBULANCE STATION.**—*a. Definition.*—The ambulance station is the combat installation of an ambulance unit for the control of its service. It invariably includes the unit CP, and usually includes the basic relay post and the house-keeping and motor maintenance facilities of the unit.

b. Location.—The ambulance station must be on or immediately adjacent to the route used by the unit in question. It should be beyond the range of hostile small-arms fire, and be protected from light artillery fire. Concealment is desirable, with cover and hard standings for transport. To facilitate control, a location between 1 and 2 miles in rear of the collecting station is optimum.

c. Establishment.—The two initial requirements of an ambulance unit beginning or changing the locale of its operations are the establishment of the ambulance station and of the ambulance shuttle. These are done simultaneously, supervised by the unit commander and his second-in-command. Locations are designated for the CP, message center, kitchen, latrines, motor park(s), and bivouac.

d. Message center.—The message center is established at the side of the route used by ambulances so that messages may be examined without causing ambulances to leave the route. It is operated by the message center clerk, and its functions are—

(1) To receive, dispatch, and record all messages to and from the unit.

(2) To act as a clearing house for all messages and supplies carried by the ambulances of the unit for other units. The destination of such messages and supplies is checked at the message center. If the ambulance upon which they arrive is not proceeding directly to the indicated destination, messages or supplies are transferred to the proper ambulance. This is the rule in the case of messages and supplies *en route* from rear to front, since ambulances returning from the clearing station normally stop at the basic relay station.

(3) To stop and examine each ambulance *en route* to and from the clearing station, entering the following data in the unit "log" in each case:

(a) Serial number of the ambulance.

(b) Name of the driver.

(c) Hour of arrival or departure of the ambulance.

(d) If the ambulance be carrying patients, the number *each* of litter and sitting patients.

This log serves two purposes: it is a current record of the distribution of the ambulances of the unit; and it is a check

on the numbers of casualties evacuated to the clearing station. (See FM 8-45.)

e. Messing.—When practicable, all personnel are messed from the ambulance station. The company may be divided into reliefs for messing, or lunches may be distributed. Personnel to the front of the collecting station or at the clearing station are fed from those stations.

f. Closing station.—The ambulances are withdrawn from the shuttle and formed in column. The station is dismantled; cargo vehicles are loaded and take their places in the column. The personnel are assembled, tents struck, packs rolled, latrines filled and marked, and the site policed and inspected.

■ 76. AMBULANCE SHUTTLES.—*a. Definitions.*—(1) The *ambulance shuttle* is a method of operating ambulance service in combat. It consists of one or more ambulance loading posts, one or more ambulance relay posts, and such ambulance traffic posts as may be required. Its purposes are to keep an empty ambulance at each loading post at all times, to prevent congestion of ambulances at any one place, and to facilitate the control of ambulance traffic. The dispersion of ambulances in a shuttle reduces losses from any single missile, and prevents traffic tie-ups in places where maneuver room is restricted.

(2) An *ambulance loading post* is a point in the shuttle, normally the point farthest forward, where one or more ambulances are stationed ready to receive patients for transportation. Ambulance loading posts are established by ambulance units, but the loading of patients is normally done by collecting personnel.

(3) An *ambulance relay post* is a point in the shuttle where one or more empty ambulances are stationed, ready to advance to replace an ambulance which has left the next post toward the front, whether it be another relay post or a loading post. Relay posts are numbered from front to rear. The *basic relay post* is that one farthest to the rear where the bulk of the unemployed ambulances, or such as remain after all other relay posts have been provided for, are stationed. It is located normally at the ambulance station.

(4) An *ambulance traffic post* is a point at a crossroad or road junction where an ambulance route divides into two or more routes to different loading posts. It is operated by a noncommissioned officer or private of the ambulance unit. This soldier, knowing which route each loaded ambulance has followed, directs its forward moving replacement to that route. This maintains the proper number of ambulances in each division of the shuttle.

(5) An *advanced ambulance shuttle* is one operated between a collecting station and one or more loading posts farther forward. Its purpose is to relieve litter squads of the collecting unit of all or part of their task. The collecting unit commander requests its establishment; but the decision to establish it rests with the ambulance unit commander or, in case of appeal by the collecting unit commander, with the authority controlling both elements.

b. Establishing ambulance shuttle.—(1) *General.*—The establishment of an ambulance shuttle may begin at either end. When the ambulance unit transports the collecting unit via the ambulance route to the site of the collecting station, the responsible officer makes a reconnaissance on the journey forward, selects the locations of relay posts, and drops from the convoy on its return journey the proper number of empty ambulances at each post selected. If the convoy does not travel the entire ambulance route prior to the establishment of the ambulance station, the responsible officer reconnoiters the remainder, returns, and leads forward the proper number of ambulances to establish each relay and loading post selected.

(2) *Location of relay post.*—The following features are desirable in the location of a relay post:

(a) Hard standing which does not interfere with the passage of ambulances or other traffic en route.

(b) Concealment of ambulances at the post from ground and aerial observation.

(c) Unobstructed view of the ambulance route, and recognizable to ambulances en route.

(d) Protection from direct fire.

(e) Ample distance from terrain features or other installations that may invite hostile fire or air action.

(3) *Distances between relay posts.*—The number of relay posts and the distances between them will vary with the situation. The primary purpose of the shuttle being to keep an empty ambulance at each loading post at all times, the first relay post should be near enough the loading post to permit a loaded ambulance to be replaced without delay. Distances between succeeding relay posts will depend upon suitable locations, the total length of the shuttle, the rate at which ambulances are loaded, and the number of ambulances that it is desirable to keep forward of the basic relay post. In general, relay posts should rarely be located nearer each other than 500 yards, nor farther apart than 1,500 yards.

(4) *Number of ambulances at each relay post.*—The maximum number of ambulances allocated to a relay post depends upon the situation. There are disadvantages in allocating a single ambulance to a relay post. The post either must be plainly marked or a soldier-in-charge must be stationed there, else drivers may pass it inadvertently; it permits of no transfer of messages or supplies to ambulances that will arrive at the loading post sooner; and one missile may destroy the entire post. These disadvantages are largely obviated by allocating two ambulances to each relay post. More than two is rarely indicated, except at the basic relay post. Whenever more than one ambulance is stationed at a relay post, including the basic relay post, they must be dispersed sufficiently to prevent more than one ambulance being put out of action by a single missile.

(5) *Operation of shuttle.*—(a) *General.*—An ambulance is loaded at a loading post and starts to the rear. As it passes the first relay post the forward ambulance in that post moves at once to the loading post; the second ambulance in the first relay post moves to replace the first in the forward position in the post, and this shift continues until all ambulances in the post have moved forward one position. As the loaded ambulance on its way to the rear passes the second relay post, the forward ambulance in that post moves forward and occupies the rear position in the first relay post, and the other ambulances in the second relay post shift their positions one place forward as described above. This same operation is repeated as the loaded ambulance passes each relay post, in-

cluding the basic relay post, on its journey to the rear. When the loaded ambulance has discharged its patients, usually at the clearing station, it returns to the basic relay post and takes station.

(b) *Control.*—A noncommissioned officer or other qualified soldier should be placed in direct charge of the basic relay post, since the number of ambulances stationed there and the necessity for dispersion may make control of this post difficult. If personnel can be spared, there are advantages in placing a soldier in charge of each relay post; the transfer of messages and supplies is thereby facilitated, and control is improved generally. However, if more than one ambulance is allocated to each relay post, an additional soldier in charge is not absolutely essential. Well trained drivers are able to operate without other supervision.

(c) *Forwarding messages and supplies.*—For the delivery of messages on the way to the rear see paragraph 75*d*. Messages and supplies on the way to the front are expedited by the following procedure: The message center removes such messages and supplies from ambulances reporting to the basic relay post and places them on the first ambulance proceeding toward the front. As the latter ambulance reaches the next relay post, such messages and supplies are transferred to the ambulance occupying the forward position in the post, and are similarly transferred to the leading ambulance in each relay post. The soldier in charge of an ambulance traffic post examines all messages and determines the destination of all supplies passing his post en route to the front. If necessary, he retains them in his possession until an ambulance passes his post destined for the proper loading post. Ambulances are not diverted from their proper routes to make such deliveries. Urgent messages and supplies urgently needed are not forwarded through the shuttle.

■ 77. OPERATIONS.—*a. General responsibilities of unit commander.*—An ambulance unit commander is responsible for all phases of the activities of his unit. The more important of these responsibilities are—

(1) Establishment, supervision, control, and termination of the ambulance service furnished by his unit.

(2) Provision of shelter, facilities for messing, and opportunities for resting to the personnel of his unit.

(3) Maintenance of the transport of his unit, including its protection from enemy action.

(4) Supervision of the operations of his unit as an agency of communications and of delivery of supplies.

(5) Emergency treatment of patients committed to the care of his unit.

(6) Transmission of timely information to his immediate superior concerning the situation within his unit.

b. Absences of the unit commander.—Proper performance of his many duties will require the unit commander to be absent from his CP much of the time. Before so absenting himself, he must notify the message center of his probable whereabouts.

c. Allotment of tasks.—Whenever the mission of the unit comprises two or more component tasks, or whenever only a portion of the means of the unit are required for the unit task, tasks should be allotted to prescribed subordinate elements of the unit, such as platoons or sections, rather than to detachments improvised from ambulances of two or more elements.

d. Plans and orders.—The dependency of ambulances upon routes and the possibility of denial at any time of their use by the enemy require an ambulance unit commander to have, at all times, at least one alternate plan that can be placed in operation without delay. He must have a working knowledge of all available routes in his zone of action, and plans for their adaptation to his requirements, subject to any restrictions imposed by higher commanders. His plans must include provision for the movement, in either direction, of the termini of his ambulance routes. The orders of an ambulance unit commander usually are issued orally, or in the form of written messages, to his subordinates.

e. Liaison.—Since the ambulance unit normally is the connecting link between the functions of collecting and clearing, close liaison with the two units charged with those functions is necessary.

(1) *With collecting unit.*—A junior officer or a noncommissioned officer of the ambulance unit is stationed at the collecting station. His principal duties are—

(a) To supervise the operation of the forward end of the ambulance shuttle. It must be remembered, however, that the loading of ambulances including the determination of numbers to be carried in each load is a responsibility of the collecting unit. (See par. 65g.)

(b) To keep the ambulance unit commander informed of the situation at the collecting station.

(c) To supervise the property exchange. (See par. 5b.)

(d) To transmit to the proper agency in the collecting unit messages and supplies brought forward by ambulances.

(2) *With clearing unit.*—A noncommissioned officer of the ambulance unit is stationed at the clearing station. His principal duties are—

(a) To exercise general supervision of ambulances during their stay at the clearing station. The unloading of ambulances at this point is a responsibility of the clearing unit.

(b) To supervise the property exchange. (See par. 5b).

(c) To deliver to returning ambulances such messages and supplies as they are to carry to the front.

(d) To inform the ambulance unit commander of any changes in the clearing plan.

f. Emergency treatment of patients en route.—All drivers and assistant drivers are trained in first aid and carry the individual equipment of the medical soldier. It is their duty to render such first aid to patients en route as may be required. In addition, when a loaded ambulance is checked at the message center, a medical officer, when practicable, or a noncommissioned officer should inspect the patients to ascertain any need for emergency treatment. Such technical measures are necessarily of limited scope; but an ambulance unit is responsible for rendering such emergency treatment as is possible with the means at hand.

g. Protection of ambulances and patients.—Ambulances are no more sacred than other military means; nor are the lives of patients more precious than those of effectives. When necessary to the accomplishment of the mission, both must be exposed to danger. However, all practicable measures must be employed at all times to minimize the danger of destruction of ambulances and the further injury of patients. The more important of these measures are—

(1) *Concealment* (pars. 74 and 76b(2)).—Movements may be made at night without lights when daytime movement is impossible.

(2) *Defilade*.—Full use should be made at rest and in movement of any protection offered by the terrain.

(3) *Dispersion*.—In convoy and at rest, when exposed to the danger of hostile fire or air action, the distances between ambulances should be increased to the point where serious damage is possible to no more than one vehicle from any one missile.

(4) *Mobility*.—Speed, up to the practical limit of safety, should be employed in crossing exposed stretches. Beyond a reasonable limit, it may prove more dangerous than the enemy.

h. Transportation of collecting unit personnel.—When the personnel of a collecting unit are transported by an ambulance unit, the movement is under the control of the ambulance unit commander unless his unit is a part of the collecting unit. If such details of the movement are not prescribed by higher authority, he determines the route, speed, arrangement of the convoy, and the point at which the movement must be stopped in the interest of the safety of his vehicles. The trucks of the collecting unit follow at the rear of the vehicles of the ambulance unit.

i. Directing signs.—Whenever practicable, directing signs suitably marked with the unit designation should be posted at all points along an ambulance route where drivers may become confused. Other suitable signs marking the ambulance station, message center, motor park, and relay, traffic, and loading posts may be used.

j. Road and bridge repair.—While maintenance of ambulance routes is not a primary responsibility of an ambulance unit, in emergencies ambulance personnel must make temporary repairs to roads and bridges to prevent interruption of the service. Ambulance units are equipped with simple tools for this purpose.

■ 78. MAINTENANCE OF TRANSPORT.—The ambulance unit being primarily a transportation agency, the maintenance of transport is a principal concern of the unit commander. For

further details concerning the maintenance of animal transport, see FM 25-5; and concerning the maintenance of motor transport, see FM 25-10. Of the several echelons of motor transport maintenance, the unit commander is concerned with the first two. These are—

a. First echelon maintenance.—First echelon maintenance is the “vehicle operator’s maintenance,” and embraces cleaning, lubricating, servicing, and minor repairs. It is that daily attention necessary to keep a vehicle in proper mechanical condition and acceptable in appearance. Minor repairs include the tightening of loose bolts, nuts, and screws, and such emergency roadside repairs as can be made by the driver with the tool kit and the spare parts usually carried in the vehicle.

b. Second echelon maintenance.—Responsibility for second echelon maintenance functions is divided between the ambulance unit commander and the motor maintenance group of the headquarters or headquarters and service company of the division medical unit. Insofar as second echelon maintenance is concerned, the ambulance unit commander’s responsibility is primarily that of prevention and inspection.

CHAPTER 7

CLEARING

■ 79. DEFINITIONS.—*a. Clearing* is the process of disposing of the casualties of a division or comparable unit. It consists of sorting all casualties of the unit, returning to duty such as are immediately fit for full duty, and transferring all others, except the dead, to a medical unit of a higher echelon. It is not to be confused with hospitalization.

b. A clearing station is an installation established by a clearing unit for the purpose of discharging the function of clearing.

■ 80. CLEARING UNITS.—*a. Functions.*—(1) *General.*—A clearing unit is necessary to supplement the service rendered by other echelons of the medical service of the division. Collecting stations must not be located too near the front to permit their being equipped for the thorough treatment of shock or for the preparation of patients for extended evacuation. Nor can there be operated at collecting stations the clerical force necessary in the preparation of reports and returns required by the commander, and of the individual records of patients.

(2) *Combat functions.*—A clearing unit is primarily a combat organization. Its principal function is to establish and operate in combat one or more clearing stations at which casualties are received, sorted, given temporary care and emergency treatment and, when indicated, prepared for further evacuation and transferred at the clearing station to a medical unit of a higher echelon, usually an ambulance unit of the army medical service.

(3) *In other than combat situations.*—If a clearing unit be organized and equipped for the purpose, it may undertake limited care and treatment of such sick and injured as will be fit for full duty within a short time. (See par. 8.) The discharge of this function, however, requires suitable organization and equipment.

b. Functional organization.—(1) *General.*—The organization of clearing units varies with the type of division medical

unit of which they are parts. (See par. 49.) However, all clearing units are organized functionally into a unit headquarters, a technical group, and a transportation group.

(2) *Unit headquarters* comprises such commissioned and enlisted personnel as are required for the command and administration of the unit. The size of this group and the scope of its functions depend upon whether the clearing unit is an autonomous company or a subordinate platoon of a headquarters company.

(3) The *technical group* comprises the commissioned and enlisted personnel who operate the clearing station.

(4) The *transportation group* comprises the personnel required for the operation and maintenance of the transport. For maintenance of transport see paragraph 78.

c. Supply (par. 57).—In clearing companies, supply is a responsibility of the clearing company commander; in clearing platoons, of the headquarters company commander.

■ 81. CLEARING UNIT COMMANDER.—*a. General.*—The senior officer of the Medical Corps present for duty with a clearing unit commands it. The scope both of his authority and his responsibilities depends upon whether the unit is a clearing company or the clearing platoon of a headquarters company.

b. Duties and responsibilities.—(1) In a clearing company the administration, discipline, morale, and training of the company. In a clearing platoon these are responsibilities of the headquarters company commander; and, insofar as they pertain to the clearing platoon, the platoon commander assists.

(2) *In combat.*—(a) Unlike the commanders of other subordinate elements of the division medical service, the duties and responsibilities of the clearing unit commander are restricted largely to the establishment and operation of the clearing station.

(b) Keeping higher authority informed of the situation at the clearing station.

(c) While the arrangement for evacuation of a clearing station is a responsibility of the division commander, the clearing unit commander should keep the agency charged with the evacuation of his station fully informed of the situ-

ation with regard to numbers and classes of transportables awaiting evacuation, and of any anticipated changes in the situation. Cooperation in this respect will facilitate the movement of evacuees.

c. Relations with other units.—The only direct contacts of a clearing unit are normally with division ambulance units to the front and with ambulance units of higher echelons to the rear. In each case the responsibility for liaison rests with the ambulance units whose dispositions and movements must conform to those of the clearing station.

■ 82. ESTABLISHING CLEARING STATION.—*a. When established.*—To prevent immobilization of the division medical service, there must be a clearing station ready to receive patients as soon as any collecting station is ready to evacuate patients. In the usual situation this will be within $\frac{1}{2}$ to 1 hour after collection begins.

b. Selection of sites.—(1) *Responsibility.*—The number of clearing stations to be established and their general locations are elements of the division medical plan. (See par. 26.) Unless prescribed in detail in the field order of the division medical unit, the selection of the exact site is a responsibility of the clearing unit commander.

(2) *Essential features.*—(a) A location on or readily accessible to routes of evacuation both from collecting stations and to the supporting medical unit of a higher echelon.

(b) Space enough for a complete clearing station. A complete station is one of sufficient capacity, either organic or through reinforcement, to clear all casualties that may pass through it. In the selection of a site, the possibility of expanding the initial station must always be considered.

(c) Adequate supply of water. If a practicable means of transporting water is available, the source of the water need not be at the immediate location of the station.

(3) *Desirable features.*—(a) Beyond the effective range of hostile light artillery.

(b) Protection from medium and heavy artillery, rarely completely attainable.

(c) Cover for concealment. Concealment of a clearing station is not alone for the purpose of safety. The location

of a clearing station affords the enemy a reliable index to other dispositions of the division.

(d) Suitable buildings to substitute for or supplement tentage.

(e) Centrally located with reference to the lateral boundaries of the units which the station is supporting.

(f) Local fuel supply.

(g) Ample hard standings for ambulances and for the unit transport.

(h) A road loop to facilitate ambulance traffic.

(i) Good drainage and, when tentage must be used, soil suitable for the erection of canvas.

(4) *Undesirable features.*—(a) In general, the opposite of the features listed as desirable.

(b) Areas that favor the persistence of chemical agents. In general, these are low places and heavily wooded areas. This feature must be carefully weighed against the advantages of concealment and protection from artillery fire.

(c) Proximity to terrain features or other installations that may invite hostile fire or air action.

(5) *Average location.*—The average location of a clearing station may be said to be one between 4 and 7 miles in rear of the division front line which combines as many desirable and as few undesirable features as possible with all essential features.

c. *Organization.*—(1) *General.*—The physical arrangement of a clearing station will vary with the characteristics of the site but the functional organization is rather definitely fixed by the requirements of the operation of clearing. The operation of the station falls naturally into the following departments:

(a) *Administration.*—This includes the administration of the unit and of patients.

(b) *Admission.*—To receive, record, sort, and direct patients to the proper department of the station for care and treatment.

(c) *Litter wounded.*—In general, litter wounded are more serious cases than walking wounded, and their care and treatment require more elaborate equipment and more highly trained personnel. It is advantageous to create a separate department for them.

(d) *Shock cases*.—The special equipment and specially trained personnel required for the treatment of traumatic shock make it essential that a department be set aside for this purpose.

(e) *Gas cases*.—If chemical agents are employed by the enemy, a department specially equipped and manned for the purpose must be set aside for the care of such cases.

(f) *Walking wounded*.—See (c) above.

(g) *Dental department*.—See paragraph 83g.

(h) *Pharmacy and laboratory*.—For the preparation of medicines and laboratory procedures.

(i) *Evacuation*.—After a case has been dismissed by any of the technical departments, he is ready for evacuation. Such cases must be cared for until they can be evacuated, and records of evacuation maintained.

(2) *Use of buildings*.—The use in whole or in part of existing buildings will modify the physical arrangement of a clearing station but should not affect its functional organization.

(3) *Exclusive use of tentage*.—The arrangement of the tents will be determined by the terrain and other considerations, such as the necessity for concealment. If sufficient space is available and there are no reasons to the contrary, tents may be arranged as shown in figure 6. The *basic unit* consists of eight tents and the kitchen, which provide shelter for all departments but little space for patients awaiting evacuation. Reserve tents are erected as needed to provide additional space for patients.

d. *Setting up the station*.—(1) *Unloading equipment*.—The equipment of a clearing unit is loaded with a view to facilitating the establishment of the station. Unit loads are arranged

Tent No. 1. CP, clearing section, dental department, laboratory, and pharmacy.

Tent No. 2. Admission and sorting. Tent No. 3. Supply section, property exchange.

Tent No. 5. For patients awaiting treatment. Tent No. 6. For shock treatment.

Tent No. 7. Walking wounded department. Tent No. 8. Litter wounded department.

Tent No. 11. Evacuation department. Tent No. 4. Baths (for gas cases). Tents Nos. 9, 10, 12 to 15. Additional tentage to be erected as required.

(Tents indicated by solid lines in diagram, and in italics in legend constitute the *basic unit*.)

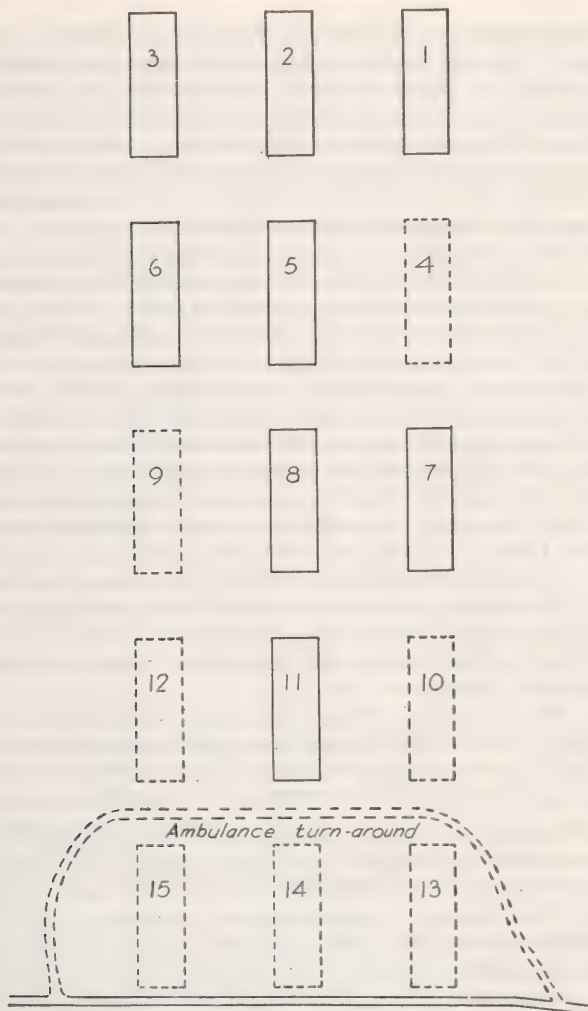


FIGURE 6.—Clearing station under canvas when no necessity for concealment exists.

For Explanatory Note, see facing page

by departments rather than by items of equipment. Upon arrival at the site of the station, each vehicle is directed to the location of the department to which its load pertains. Personnel are organized into permanent details for establishing the several departments of the station. Each detail unloads the equipment of its department, erects such tentage as is required, and arranges the equipment of the department for use. For further details, see FM 8-5.

(2) *Early priorities.*—As soon as the station is opened there is a demand for sterile water and for boiling water for sterilization. Hot liquid foods are also needed early. Hence, heating means are among the first priorities in the establishment of a clearing station. (See also *e*(1) below.)

e. Signs and markers.—(1) *Geneva Cross.*—When secrecy is not desired, the site may be marked with the Geneva Cross. This is done in two places: a conventional Red Cross flag is hoisted on a flag pole and a ground marker is laid out to indicate to enemy fliers the nature of the installation. Because the Red Cross does not register on aerial photographs, the Geneva Cross is laid out in black and white, either a white cross on a black background or *vice versa*. It may be improvised with canvas or salvaged sheets. The arms of the cross should be not less than 24 feet in length and 8 feet in width. It should be placed near the station and where it is clearly visible from the air.

(2) *Directing signs.*—Signs indicating the location of the clearing station should be posted along the ambulance routes, particularly at road intersections. The military police on duty in the area should be informed of the location.

■ 83. OPERATING CLEARING STATION.—*a. General.*—The functions of a clearing station are similar to those of a collecting station. The principal difference between the two installations is that, because of more elaborate equipment and a more favorable location, the clearing station is able to undertake certain measures essential to further evacuation of casualties that are impracticable or impossible in a collecting station. See chapter 5 for further details of operation.

b. Administration.—(1) *General.*—The administration of a clearing station includes all the housekeeping functions,

supply, and accounting for both the unit and the patients. The headquarters office ordinarily includes the unit CP and the section devoted to patient's records; while the supply section, to lessen confusion, is usually located apart from the other two administrative sections. The kitchen is located conveniently, but where it does not interfere with other departments.

(2) *Command post*.—If tentage be used, it is usually located in a portion of a tent adjacent to the admission tent. It is operated in the same way as any unit headquarters.

(3) *Clearing section*.—This section is devoted to the maintenance of records of patients, and its operations are completely separated from those of the command post, although these two sections may be located in the same tent or building. From data furnished at intervals by the admitting and evacuating departments, it prepares periodical consolidated reports to the division surgeon. For the forms of such reports, see FM 8-45. In the event that any dead are buried by clearing unit personnel, this section records the data required by higher authority, including the location of the graves, with sketches of the plots when practicable.

(4) *Supply section*.—This section is charged with unit supply, property exchange, and salvage of clothing and equipment of patients. A tent or space in a building is set aside for its operations, but it must also provide representatives at the admitting and evacuating departments. For the method of procuring supplies see paragraph 57. The supply section of the clearing unit should maintain a small reserve, especially of medical supplies, to prevent shortages while awaiting replenishment by the supply officer of the division medical unit. Once a clearing station is in operation, the daily needs can be anticipated with a fair degree of accuracy.

The supply section also collects and disposes of in accordance with the instructions of the division commander the clothing and equipment removed from patients.

c. Admission.—(1) *General*.—All patients are received in this department, regardless of the manner in which they arrive or the character of the disability. Incoming ambulances are unloaded at this department by a litter squad.

(2) *Property exchange.*—The supply section maintains a supply of litters, splints, and blankets in the admitting department. (See b(4) above.) When a patient is admitted from an ambulance on a litter or with attached splints or blankets, an exact exchange is made at once with the ambulance driver.

(3) *Sorting.*—The admitting officer examines each patient and determines his immediate disposition within the clearing station. Cases are classified primarily into the sick and the injured, and secondarily into litter and walking cases. Gassed patients may fall into either class, depending upon the lesions.

(4) *Records.*—A qualified clerk keeps a record of all patients admitted and furnishes it at intervals to the clearing section of the administrative department. The necessary information is obtained from the emergency medical tag on the patient, or by questioning him. In the event that a patient arrives without an EMT, one is made out and attached to him. For the form of the records kept in the admitting department, see FM 8-45.

(5) *Equipment and valuables.*—The equipment brought with the patient is turned over to the representative of the supply section. Valuables are not ordinarily taken from patients at a clearing station, but every effort must be made to safeguard them. The looting of wounded is a capital offense in time of war.

(6) *Space for patients awaiting treatment* must be provided in the admitting department. Cases requiring immediate attention are taken at once to the proper department.

d. Litter and walking wounded departments.—Patients are taken from the admitting or shock treatment departments to one or the other of these treatment departments, given the necessary medical or surgical care, and sent as the individual need demands either to the shock treatment or evacuation departments. Treatment is directed toward preparing the patient for immediate return to duty or for further evacuation; and is restricted to the changing or adjustment of dressings, arrest of hemorrhage, and administration of prophylactic sera and narcotics. If the condition of the patient does not permit immediate evacuation, the evacuation department is so notified in the event that he is transferred

to that department. A concise record of the treatment given is recorded on the EMT.

e. Shock treatment.—This department is under the supervision of the officer in charge of litter wounded, with a specially trained noncommissioned officer in direct charge. Although the facilities for treatment in a clearing station are limited, the treatment of shock can be made effective with well-trained personnel, and is of the greatest importance. Transfusions of preserved blood or blood-replacing solutions are practicable. All treatment given is recorded on the EMT. Patients are usually transferred to this department direct from the admitting department, but may be transferred from any of the other technical departments.

f. Treatment of gassed cases.—These cases must be isolated from others, and, if more than one type of gas is used, it may be necessary to isolate the different types of cases from each other. Bathing facilities must be provided for the treatment of mustard gas injuries. The personnel must be specially trained. Cases requiring venesection may be sent to the litter-wounded department for this operation. Usually, if mustard cases occur, they will occur in great numbers, and the clearing station must be reenforced to deal with them.

g. Dental department.—A small dental department is established to give emergency treatment to afflictions involving the teeth which may be just as incapacitating as a more serious condition. Many of these cases can be returned to full duty at once. In addition, the services of the dental surgeon are available to any of the other departments in the treatment of surgical conditions of the jaws.

h. The pharmacy and laboratory are in charge of a specially trained technician. Ordinary clinical laboratory examinations are practicable, including blood typing.

i. Evacuation.—(1) *General.*—All patients including those who die in the station are disposed of through the evacuation department. As soon as other technical departments have completed treatment of a patient, he is transferred to the evacuation department where he is cared for until disposition is made of him.

(2) *Sorting.*—The sorting in this department is the most important of all within the division. Here the decision is

made as to whether or not the patient will be retained within the division. Patients are classified for disposition as follows:

(a) Patients to be held for further care at the request of another department.

(b) Patients to be returned to another department for further treatment, usually for shock.

(c) If there be a surgical hospital in immediate support, patients to be transferred to that agency at once.

(d) Patients to be evacuated by a medical unit of a higher echelon, ordinarily to an evacuation hospital. This class of cases is further subdivided into litter and sitting cases, and into priorities for evacuation.

(e) *Bona fide* minor casualties to be returned to duty without guard.

(f) Malingerers and deserters fit for duty to be turned over to military police.

(g) Prisoners of war. (See (3) below.)

(3) *Disposition of casualties.*—(a) *Patients transferred from division.*—These include patients transferred to surgical hospitals within the division area and to other medical installations farther to the rear. The records of such patients are closed. Their equipment is retained by the supply section. Each must have an EMT properly made out and attached to his person, and with entries complete to date. The loading of the transport for such patients and, in case more than one type of transport be used, the type of transport for each patient is controlled by the evacuation officer.

(b) *Patients returned to duty.*—Patients not under arrest may be returned to their organizations in one of several ways. The choice of methods depends upon the situation. They may be permitted to return individually, either afoot or on transport returning toward their organizations. They may be held at the clearing station until a group is collected; this group may be returned in charge of a noncommissioned officer, either one who is a discharged patient or another detailed for the purpose. Or they may be held at the clearing station until sent for either by their organizations or by another agency designated by the division commander. Malingerers and deserters must be placed in arrest and delivered to the military police at the clearing station. A written

statement of the alleged offense should accompany each such case. Their individual equipment must be restored to all patients returned to duty.

(c) *Prisoners of war.*—Prisoners of war are disposed of as any other patients. If they require further treatment, they are evacuated. Whether or not a guard is furnished is decided by the military police or higher authority. When in the clearing station, prisoners of war who are fit for some duty should be employed. Their retention for duty is a command decision. (See par. 10b(1)(e) and 67c(6).)

(d) *Deaths.*—All deaths in the station are reported to the evacuation department. This department closes the records of such cases and sends them to the clearing station. (See b (3) above.)

(4) *Records.*—A record of the disposition of all patients, whether by death, evacuation, or return to duty, is maintained in the evacuation department. For a form for the evacuation record, see FM 8-45. This record is submitted at intervals to the clearing section.

(5) *Property exchange.*—A representative of the supply section is stationed in the evacuation department to supervise the property exchange in connection with patients evacuated.

■ 84. CLOSING CLEARING STATION.—a. *General.*—It requires approximately 2 hours for a trained unit to close, strike, and load a clearing station. The necessity for closing a station must be anticipated, whenever possible, and orders issued in sufficient time. It will often be possible to contract the station prior to closing if warning is given, thus saving time when the hour of closing arrives.

b. *Evacuation.*—The critical factor in closing a clearing station is the disposal of patients. The station commander should keep the proper authority informed at all times of his evacuation requirements. If a surgical hospital is in immediate support, nontransportables and other patients may be transferred to it. However, the clearing unit is responsible for the patients in its station, and the station may not be closed until proper disposition has been made of them. If patients must be abandoned, adequate shelter and a care-taking detachment must be left for them.

c. Procedure.—The sequence of the operations involved in closing a station is practically the reverse of those involved in opening it. This is—

(1) The personnel on duty in each department pack their equipment and place it where it can be loaded.

(2) The vehicles allotted for the equipment of the several departments are driven to the proper places, and the equipment is loaded by the personnel on duty in the various departments. Drivers control the stowage and check the equipment from a loading list.

(3) If canvas has been used, tent-striking squads are formed and assigned to the several tents. Tents are struck, folded, and loaded by these squads.

(4) The transport is formed for movement.

(5) The enlisted personnel of the unit forms in a skirmish line and polices the area.

(6) The sanitary detail closes the last latrine.

(7) The unit commander inspects the area.

CHAPTER 8

MEDICAL SERVICE IN CAMP AND BIVOUAC

■ 85. DEFINITIONS.—As used herein, a *camp* is a temporary or semipermanent station for troops, located beyond the radius of activity of hostile ground forces; a *bivouac* is a temporary resting place for troops, without permanent shelter and sanitary facilities, and in proximity to hostile ground forces.

■ 86. MEDICAL SERVICE IN CAMP.—*a. General.*—The considerations governing the dispositions of troops in a camp are convenience in command and administration, facilities for training, and the adaptability of the terrain to sanitary requirements. For the responsibility of the medical service in connection with the selection and arrangement of camp sites, see FM 8-40.

b. Priority.—The incidence of sickness in any group of people including soldiers is among the most predictable of all events. Every unit of any size will arrive in camp with sick or injured requiring immediate care and treatment. The first requirement in the establishment of any camp is the provision of proper facilities and sufficient medical personnel for the care and treatment of the sick. Medical units in proper proportions must be given a high priority in each phase of a concentration.

c. Physical plant.—(1) Temporary care and emergency treatment of the sick and injured must be undertaken at the time and the place that the patient and the medical service are brought together, regardless of the available facilities.

(2) Tentage is not satisfactory shelter for seriously ill or injured patients. Proper definitive care and treatment of patients require the more important facilities of a permanent plant, even though such facilities be installed in existing buildings constructed for other purposes or in temporary buildings erected for hospital use. Large warehouses and other industrial structures usually are poorly subdivided, and are apt to be located in an environment wherein cleanliness is difficult or

impossible. While in the absence of more satisfactory buildings such structures may be used temporarily, their selection for extended use can rarely be justified. Few private dwellings are well adapted to hospital use because of poor internal arrangement, especially narrow, steep, or twisting stairways impossible of passage with a patient on a litter.

(3) Apartment houses are usually satisfactory, provided stairways are suitable or that they are equipped with elevators that will accommodate wheeled or other litters. Public buildings, such as schools and courthouses, as a class are well adapted to hospital use. Ample corridors lead to all parts of the building, stairways are wide, rooms are large, and sanitary facilities are designed to provide for the needs of groups rather than of individuals.

(4) Obviously, civil hospitals are the most ideal of all existing structures, but their exclusive use is rarely feasible because of the requirements of the civil population. Nor in general, since civil populations make less use of hospitals than do military forces, is their capacity sufficient for any considerable number of troops. The hospitalization of military personnel in institutions operating under civil jurisdiction is an expedient that should be chosen only in emergencies.

(5) In the absence of suitable existing structures, new construction must be undertaken. But, whether the plant is of new construction or in a building adapted to the purpose, so much of the plant as is necessary must be completed, equipped, manned, and ready to receive patients when such patients appear.

d. Sanitation in its broadest sense is the first concern of the surgeon of every unit in camp. In this connection, see paragraph 6 of this manual, and FM 8-40.

e. Training is the principal activity in a camp. All other essential functions are so organized as to interfere as little as possible with training. The medical service must be organized to provide prompt and adequate care and treatment of the sick and injured and, at the same time, afford the opportunity for proper training of medical personnel. Since casualties in camps are confined to diseases and nonbattle injuries (except in the case of air attack), medical units of

the division, at authorized strengths, can be properly trained while discharging their service functions.

f. Attached medical personnel.—(1) *Dispositions.*—The dispositions of the several sections of a regimental detachment will be dictated by the dispositions of the subordinate elements of the regiment. Whenever possible, however, control of all sections should be retained by the detachment commander in the interests of training and administration. (See par. 43.)

(2) *Functions.*—The functions of medical detachments in camp are: the operation of dispensaries for the primary treatment of the sick and injured (see par. 35); training, including the instruction of all personnel in the unit in hygiene and first aid (par. 43); and the supervision of sanitation (par. 6).

g. Collection.—Since ambulances can operate in all parts of a camp, there is no necessity for collecting units to function in evacuation. For the duties of collecting units in connection with sanitation, see paragraph 60*a* (2). In addition to training, collecting units ordinarily furnish the interior guard for the division medical unit. They are equipped with arms for such duties only.

h. Division ambulances evacuate the dispensaries of the various units of the division. To insure coordination, this task should be assigned to a particular ambulance unit; and, to facilitate training, the duty should be rotated among the ambulance units.

i. Clearing is primarily a combat function and is not an echelon of the medical service of a camp. Clearing units spend their time in camp in training, and may share the interior guard with collecting units. The clearing unit ordinarily operates the dispensary of the division medical unit. Experience has shown that clearing units cannot be given proper field training if they are required to operate a fixed hospital. Their duties in the field require facility in loading, transporting, unloading, and using their combat equipment; and this cannot be acquired in a fixed hospital. However, certain technical specialists in clearing units may, with profit, be given individual training in the fixed hospital of the camp.

j. Hospitalization.—(See also *c* above.) A station hospital should be established in or very near each camp. Patients from tactical units may be admitted by informal transfer from their unit dispensaries so that they are returned to their organizations when ready for duty. Those requiring treatment in a general hospital will ordinarily be transferred formally, and will require replacement.

■ 87. MEDICAL SERVICE IN BIVOUAC.—*a. General.*—The dispositions of troops in bivouac are governed by considerations of security, secrecy, and future tactical employment. Their arrangement usually differs from that in camps, tactical units being more widely dispersed and security detachments operating at some distances from the bivouac area proper. Necessity for secrecy may impose restrictions upon medical operations. For the medical service of an outpost, see paragraph 88.

b. Attached medical personnel.—Battalion sections are ordinarily attached to their respective battalions and, depending upon the situation, may or may not operate battalion dispensaries. The regimental dispensary may be able to serve one or more battalions in addition to the headquarters; but tactical considerations will prohibit soldiers moving any distance in search of medical care.

c. Collection.—A collecting station is not established in bivouac. (See also par. 88.)

d. Division ambulances evacuate dispensaries, usually on call. (See also par. 88.)

e. Clearing.—The disabled must be evacuated from the division area as in any situation in the presence of the enemy; so a clearing station must be established for that purpose, although only so much of its equipment is set up as the immediate situation requires.

■ 88. MEDICAL SERVICE OF OUTPOSTS.—*a. General.*—An outpost is a security detachment posted to protect the main body from hostile ground observation and against a surprise attack. The distance that it operates from the main body depends upon its strength, composition, and mission, and upon enemy capabilities. This distance is usually sufficient to protect the

main body from hostile small-arms fire, and may be great enough to prevent the enemy's artillery from bringing effective fire upon the main position. There may be but one outpost operated under central control; there may be two or more outposts, each a separate command operated under central control; or the various units of the command may each outpost their own positions or areas with local security detachments. The details of the medical service of an outpost will depend upon the organization, size, and character of the outpost.

b. Local security detachments are furnished medical service by the battalion sections of the units from which they are drawn.

c. Attached medical personnel.—Battalion sections are attached to their respective battalions. Dispersion of elements may indicate the increase in the number of company aid men, using litter bearers for the purpose and requiring each company to evacuate its casualties to the aid station or an ambulance loading post. (See also *d* below.) If elements of the battalion be detached, the attached medical personnel are proportioned among the several elements. Aid stations are not established until the necessity therefor arises.

d. Collection.—A collecting station is not established specifically to support an outpost unless the outpost becomes engaged and its mission require it to hold its position. In this event the outpost line becomes a line of resistance and the medical service becomes that of a defense. However, units on outpost ordinarily cover such extended fronts that some reinforcement of their attached medical personnel may be necessary. Such reinforcements are drawn from collecting units and attached to the outpost. The specific employment of these reinforcements will be determined by the outpost commander, advised by his staff surgeon.

e. Division ambulances may evacuate the outpost upon call. It is usually preferable, however, to attach ambulances to the outpost for this purpose. Such attached ambulances are especially useful during the withdrawal of an outpost under fire.

f. Clearing.—The clearing station of the division serves the outpost.

g. Medical service in withdrawal of outpost.—The general principles of medical service in retrograde movements apply. (See ch. 12.) The wide dispersion of elements and the rapidity with which they withdraw under ordinary conditions make collection of casualties difficult, but they also operate to reduce the number of casualties. Ambulances should be used whenever possible.

CHAPTER 9

MEDICAL SERVICE ON MARCHES

■ 89. GENERAL CONDUCT OF MARCHES.—*a. Distribution of troops.*—A command may march in one or more columns. When in the presence of the enemy, each column ordinarily includes combat teams of infantry and field artillery, with supporting units of other arms and the services, and is organized into a main body and one or more security detachments. Still other security detachments may operate under the control of the force commander.

b. Security detachments of marching units consist of Cavalry, reconnaissance detachments, and advance, flank, and rear guards. The use of an advanced guard is habitual when in the presence of the enemy regardless of the direction of the march, and other security detachments are employed as the situation indicates.

c. A reconnaissance detachment other than organic reconnaissance troops, squadron battalions, has no permanent organization. The strength and composition of detachments will vary according to the opposition expected and the mission to be executed. In general, reconnaissance detachments operate at greater distances from the main body than other security detachments with the possible exception of Cavalry.

d. An advance guard is a security detachment which precedes and covers the column on the march. It is normally composed of troops taken from the column it is protecting; and it operates under orders of the column commander until a condition arises for coordination by the next higher commander. For the duties of an advance guard, see FM 100-5.

(1) The *strength and composition* of an advance guard vary with the strength and mobility of the command, the mission, the situation, the terrain, and time of day. In the infantry division, it invariably includes Infantry; in the cavalry division, it invariably includes Cavalry; and these basic units may be reinforced with artillery and other troops. The strength of an advance guard will vary between a small fraction and as much as one-third of the entire force.

(2) *Organization*.—An advance guard is organized into a support and a reserve. The support precedes the reserve, and is divided into support proper and the advance party. The advance party sends out a point which precedes it on the march.

e. A flank guard is any body of troops which is sent out by the commander of a force as a special security detachment to protect his flank during the march. Its composition and strength may vary from a small force of one arm to a well-rounded force composed of all arms.

f. A rear guard protects the rear of a marching force against hostile surprise, harassment, and attack. The strength, composition, and employment of a rear guard vary between wide limits, depending upon the mission, the terrain, the road net, and the attitude and capabilities of the enemy.

g. The main body of a marching force is organized in different ways, depending upon whether tactical employment, comfort of the troops, or other considerations are governing. In the presence of the enemy, it is invariably organized in a way that will facilitate its development for combat. This is accomplished by organization of combat teams composed of infantry, cavalry or armored units, and artillery, with their normal supporting troops. Service elements, if accompanying, normally are placed at the rear of a column. Otherwise they await orders in a rear concealed location.

■ 90. MEDICAL SERVICE OF SECURITY DETACHMENTS.—*a. General*.—The organization and operation of the medical service of a security detachment will vary widely with the strength, composition, mission, and zone of operations of the security detachment. Certain general fundamentals apply; but even these must be interpreted in connection with the special elements in each situation. The more important of these are—

(1) In every security detachment, elements as large as a regiment should be accompanied by their medical detachments; those as large as a battalion, by their medical sections; and others by a proportionate or even larger share of the attached medical personnel of the unit from which they are taken.

(2) Unless medical contact can be maintained between the security detachment and the main body, division medical troops must be attached to the security detachment and the responsibility for the evacuation of his command decentralized to the security detachment commander.

(3) The strength and composition of the reinforcing medical troops are determined by—

(a) The strength of the security detachment.

(b) The mission of the security detachment and the probable enemy reaction thereto. If serious combat be a possibility, more medical service will be required.

(c) The zone of action of the security detachment. The greater the distance it operates from the main body, the more independent must it be of the main body. If, within a reasonable time, the main body will traverse the zone of operations of the security detachment, the medical reinforcements need not be so great. The bulk of the casualties of the security detachment may safely be left with or without caretakers for the main body to evacuate, reducing thereby the need of ambulances in particular.

(4) Facilities for clearing are not ordinarily attached to a security detachment smaller than a brigade. The casualties of smaller security detachments are cleared through the clearing station of the main body or, if it be more convenient, through other medical installations in the area.

b. Cavalry.—Detachments of Cavalry as large as a regiment *should* have, and those as large as a brigade *must* have, a suitable proportion of a medical squadron attached.

c. Reconnaissance detachments (a above).—The organization and employment of reconnaissance detachments vary so widely, only general methods may safely be stated.

d. Advance guards.—The main body may be expected to follow the advance guard within a reasonable time. The march casualties of the advance guard may be disposed of through the march collecting posts (par. 91b). However, in some situations the advance guard may be expected to engage in serious combat before the main body can be developed. In this event there may be a considerable delay before the medical support of the advance guard can be undertaken by the division medical service; and some collecting personnel and

ambulances should be attached to the advance guard in order to insure prompt support of its attached medical personnel. Such attachments are *in addition* to those made for the purpose of establishing march collecting posts, and they should revert to the control of the division medical service as soon as march conditions cease. (See also par. 91b(2).)

e. Flank guards.—The main body cannot be expected to traverse the zone of operations of a flank guard. (See *a* above.)

f. Rear guards.—Depending upon the situation, the medical service of a rear guard will be that of an attack, a defense, a withdrawal, or a delay in successive positions. For further details consult the index for the medical service of such operations. Since the general operation of a rear guard is a retrograde movement, time becomes an important factor, and the medical service should be augmented accordingly. (See also *a* above.)

■ 91. MEDICAL SERVICE OF MARCHING COLUMNS.—*a. Attached medical personnel* administer first aid along the route. Much of this can be done during halts. When a medical soldier falls behind performing such duty he hastens to rejoin his unit when he has finished. Casualties are disposed of as follows:

(1) If the casualty is able to continue the march—

(a) Without further assistance, he is sent to rejoin his unit.

(b) With some assistance, he is given such aid as relieving him of all or part of his heavy equipment and arranging for his transportation on some vehicle of the unit train. His equipment, if he continue the march on foot, may be placed on a unit vehicle, in an accompanying ambulance, or distributed among his abler comrades.

(2) If the casualty is unable to continue the march—

(a) He walks, is carried, or is transported in a vehicle as the case may be to the next march collecting post, and there transferred to the division medical service.

(b) If it is impracticable to deliver the casualty to a march collecting post, he may be made comfortable along the side of

the route and there left with or without a caretaker for the division medical service to evacuate.

b. Collection.—(1) A *march collecting post* is a station along a route of march where attached medical personnel may transfer to the division medical service such casualties as are unable to continue the march. Each is operated by one or more soldiers of a collecting unit, and is equipped with litters, blankets, dressings, and simple medicines. A supply of potable water is most desirable, although this may have to be furnished in containers. The site must be adjacent the route of march, and should provide some comfort to casualties such as shelter or shade. If the road net permit of ambulances using routes other than those used by marching columns, march collecting posts should be located so as to facilitate the use of such routes. (See *c* below.)

(2) *Establishing march collecting posts.*—The sites for march collecting posts are selected in advance and announced in the march order. The number of posts established depends upon the length of the march, the road net, the physical condition of the troops, and the weather. In general, they need not be closer than every mile or two, and should not be farther apart than every 4 or 5 miles. Because of their more rapid rate of march and the means of transportation available to each soldier, march collecting posts are not ordinarily used with cavalry or motorized columns (see (5) below.) A detachment of collecting personnel, normally transported in ambulances, is attached *for march control only* to the advance guard. This detachment marches in rear of the reserve of the advance guard and drops off, at the site of each designated collecting post, the personnel and equipment to establish that post. When any ambulance of this detachment drops the last of its load, it remains at that particular collecting post and reverts to the control of the division medical unit. This detachment must not be confused with reinforcements for the advance guard from the division medical unit.

(3) *Operating march collecting posts.*—Although a march collecting post is a simple installation and only very simple

procedures may be undertaken, the general principles of the operation of a collecting station apply. (See par. 65.)

(4) *Closing march collecting posts.*—Each march collecting post is closed when the rear of the column approaches. An ambulance unit or a sufficient detachment therefrom marches near the rear of each column to gather the personnel from the closed posts.

(5) *Other methods of march collection.*—When for any reason the establishment of march collecting posts is impracticable, march casualties must be collected and evacuated by one of two methods:

(a) Casualties are disposed of by the wayside by attached medical personnel, and collected and evacuated by a detachment of collecting personnel and ambulances marching at the rear of the column.

(b) Ambulances are attached to regiments or smaller units; and casualties are carried with such organizations until such time as they can be transferred to the division medical service.

c. *Division ambulances.*—The task of evacuating march collecting posts is allotted to one or more ambulance units. To insure better control, the ambulances used in establishing march collecting posts should come from the unit charged with their evacuation; but it is not essential that the ambulances used in gathering the personnel from the closed stations come from the same unit. The latter duty may be given to an ambulance unit marching near the rear of the column. The road net may force ambulances to use, for evacuation of the march collecting posts, the same routes used by marching columns. Whenever possible this should be avoided. However, when other routes are used, provision must be made for the evacuation of such casualties as may be dropped at places other than march collecting posts.

d. *Clearing.*—The clearing station already established (or, if none were established, one established at the previous camp or bivouac) will serve for the early stages of a march. As the distance between the marching columns and the clearing station increases, it must be displaced by echelon to a more

suitable location. Ordinarily, not more than one such displacement will be required in any one day of march although, if the enemy is encountered, a new location may be indicated at once.

■ 92. MARCH DISPOSITIONS OF MEDICAL UNITS.—*a. General.*—

The principles set forth in this paragraph apply only to such medical units or elements thereof that are *not* engaged in the medical service of the march. Nor are they intended to restrict any dispositions that may be desirable in marches conducted solely for the purpose of training.

b. Attached medical personnel.—(1) *Unit surgeons.*—If there is more than one medical officer with a unit, the surgeon may march with the commander and the others with the bulk of the proper medical section. If there is but one, he marches with the bulk of the section.

(2) *Battalion sections*, less company aid men, march in rear of their respective battalions, but in advance of the battalion train. *Company aid men* follow their respective companies. The *headquarters section* marches in rear of the regiment, but in advance of the train.

(3) *Medical vehicles* march with the trains of their respective units.

c. Division medical unit.—(1) The proper medical support for each major combat team should follow it, and may be attached to it for march control. Such dispositions minimize delay in establishing division medical service in the event of combat.

(2) Clearing units should march together, preferably in rear of one of the center columns. In the usual situation this will place them near their probable location if they be required to establish station.

(3) Headquarters or headquarters and service companies should march in the same serial with clearing units.

(4) All other considerations being equal, detachments of the division medical service used to reinforce security detachments and to provide medical service for the march should not be taken from the support of a combat team that will probably become involved in combat immediately upon contact.

■ 93. MARCH CONTROL OF MEDICAL UNITS.—*a. General.*—Basically, when in the presence of the enemy, a division marches as two or more reinforced combat teams. Each combat team is a subordinate command under division control. If a combat team march in two or more columns, each column is a subordinate command of that particular combat team. After forming these combat teams, there will usually remain certain elements of the division which must be organized into a special column or columns under division control. Headquarters and service and clearing elements of the division medical unit are usually placed in these special columns. Collecting and ambulance elements are usually placed with the combat team columns.

b. Division medical units attached to march groupings operate under control of the march group commander.

c. All elements of the division medical service not attached to march groupings march with the group designated in the march order. So long as march conditions prevail, they cannot be operated by the commander of the division medical unit until they have been released by the division commander from such march control. When march conditions cease, a division order announces that fact which, unless otherwise specified in the order, releases all division medical units from march control.

CHAPTER 10

MEDICAL SERVICE IN ATTACK

■ 94. **GENERAL CHARACTERISTICS OF ATTACK.**—Generally speaking, the main features of an attack consist of the following measures:

a. Reconnaissance and covering forces push in rapidly to reconnoiter the main hostile position, its flanks, its weak localities, and to find the terrain most favorable for attack.

b. (1) *Attack units*, under cover of supporting fire and smoke and taking advantage of favorable features of the terrain, press forward, disregarding what happens on other parts of the battle front. These attack units do not attempt to maintain alinement with like units on their flanks. Each attempts, by taking advantage of the terrain, to outflank the defended areas.

(2) *Local reserves* are disposed in depth to reenforce the leading units and to prevent their being cut off and isolated.

c. The attack is made with all available strength. The mass of the means is disposed in depth behind the front chosen for the main attack.

d. *General reserves* are held available to exploit the successes, to hold the ground gained, and to carry on the action against countermeasures of the enemy.

■ 95. **TYPES OF ATTACK.**—Attacks are classified with respect to degree of coordination and scheme of maneuver. (See FM 100-5.)

a. *Coordination.*—An attack begun in accordance with a prepared plan which prescribes a definite mission for each element of the force is called a *coordinated attack*. When conditions preclude complete development, units are employed successively as they become available and without waiting to prepare a coordinated attack.

b. *Scheme of maneuver.*—(1) A *penetration* is a frontal attack which contemplates piercing the enemy defense in sufficient width and depth to rupture completely the hostile posi-

tion. The initial break-through is followed by an attack to envelop one or both of the flanks thus created.

(2) An envelopment consists of attacking both the hostile front and one or both flanks. If both flanks are enveloped the operation is called a double envelopment. The attack against the hostile front seeks to fix the enemy. The enveloping attack overpowers the opponent by striking him in flank. Enveloping attacks seek to avoid the organized battle position of the defender and to strike, with the main effort, at a place or places where he is least prepared, either by organization of the ground or the dispositions of his forces, or both, to resist the attack.

■ 96. CHARACTERISTICS OF ATTACK INFLUENCING MEDICAL SERVICE.—*a. The type of attack influences the—*

(1) Number of casualties and their distribution in time and space;

(2) Allocation of medical means;

(3) Location of medical installations; and

(4) Movement of medical units.

b. Surprise is a most important factor in the success of an attack. Preparations must be as nearly secret as possible.

c. Planning.—The attacker has the initiative and, so long as he holds it, directs the course of the action. Except in uncoordinated attacks, action is planned in advance.

d. Exploitation of success.—Except in limited objective attacks, when the enemy is expelled from his position the success gained is exploited in order to prevent his organization of a new defense on a rearward position; to force him to retreat; and finally, by energetic pursuit, to turn the retreat into a rout and destroy him. This characteristic of the attack requires medical planning and provision of medical means for the pursuit. (See sec. III, ch. 13.)

■ 97. ATTACHED MEDICAL PERSONNEL IN THE ATTACK.—*a. With infantry units.*—(1) *General.*—Movement of combat elements increases the difficulty of medical service, both in maintaining contact and in removing casualties from the field. Since the effectiveness of its support ceases when it loses contact, each medical element of an infantry unit must subordinate other

considerations to that of maintaining contact with its unit.

(2) The battalion being the basic combat unit of infantry, battalion medical sections are attached to their respective battalions.

(3) *Deployment.*—(a) *Development.*—Before reaching the zone of hostile artillery fire, march columns are broken up into smaller columns which march to designated assembly positions. Depending upon the situation, a battalion may remain in one march column, although moving cross-country, until reaching the assembly position; or it may break up into company or even smaller columns before reaching the assembly position. During development, the battalion medical section, less company aid men, marches at the rear of the battalion. As the battalion breaks up into smaller columns, litter squads are deployed to cover the entire battalion front.

(b) *Assembly area.*—An assembly area is an area prescribed by a higher commander for the assembly of a unit for final preparations for the attack. Unit commanders regain control of scattered elements and organize their commands for combat. Packs are dropped, extra ammunition issued, reconnaissances and plans completed, and orders issued. Here the battalion surgeon receives the battalion order, completes his plans and issues his own orders, and causes extra dressings to be issued to company aid men and litter bearers.

(c) *Approach march.*—From assembly positions troops advance in the approach march. Units march in smaller columns at increased intervals and distances, and make full use of cover and defilade while moving toward the line of departure. Litter squads are deployed to cover the widening battalion front, and the remainder of the section, less company aid men, march along the axis of the advance in extended order. The battalion surgeon remains with the battalion commander as long as possible in order to keep himself informed of developments in the situation.

(4) *Line of departure.*—A line of departure is a line designated by a higher commander for purposes of coordinating the departure of attack elements. Units move forward to the attack from the line of departure at a designated time. Initially, this movement may be a resumption of the approach march; but, when the effectiveness of hostile fire

makes it necessary for the Infantry to return the enemy's fire in order to continue the advance without excessive losses, the advance by fire and movement is begun. It is at this point that the character of the medical service changes from that of the approach march to one of combat.

(5) *Company aid men* are reported to their respective companies prior to development, and remain with them throughout. (See par. 38.)

(6) *Litter squads*.—Unless otherwise indicated, litter squads are deployed initially across the battalion front on the basis of the strength of the assault echelon, the number of units therein, and the task allotted each unit. The initial distribution of litter squads is modified as the situation changes. If elements of the battalion are held in reserve, whenever possible a proportionate reserve of litter squads should be held to support them when they are committed. Litter squads follow the assault echelon as closely as is consistent with reasonable safety, taking full advantage of all available cover and defilade. For further details of their employment, see paragraph 37.

(7) The *aid station* is not established, or is only partially established, until the need therefor can be foreseen or when there is slow progress or no progress at all. In the early stages of an attack there may not be a single aid station fully established in the regiment, but sites for them should have been selected tentatively. When established, only such part of the aid station is set up as appears to be required, and it must be moved forward, by echelon if necessary, as soon as the advance of the combat elements leaves it out of supporting position. During such periods as there is no aid station established, litter squads carry litter wounded and direct walking wounded to the designated axis of advance of the aid station group where they are treated, made comfortable, and left in a protected location for the supporting medical echelon to evacuate. For further details of the operation of the aid station see paragraph 36.

(8) *Reserve battalions*.—Ordinarily all battalion medical sections are attached to their respective battalions, including those initially in reserve, prior to the attack. The confusion

of battle and the movements of forward elements in the attack make it almost impossible to withdraw from elements already engaged any medical personnel to accompany reserve battalions into action. For this reason, unless urgently necessary, no medical personnel should be taken from reserve battalions to reinforce battalions already committed; and, if the formal attachment has already been made, such employment is subject to the decision of the regimental commander. For the operation of the regimental aid station to serve elements in reserve, see paragraph 36a(1).

b. With artillery units.—(1) *General.*—The tactical mobility of artillery is greater than that of Infantry, but artillery does not combine movement with fire. Movement ceases when it becomes actually engaged, and the operations of its attached medical personnel do not vary with the type of the attack. During changes of position during combat, the medical service is that of the march (ch. 9). Artillery is usually placed well forward initially in the attack, and is echeloned less in depth than in the defense. In successful attacks it is advanced by echelon to insure close support of the Infantry.

(2) *Battalion medical sections* are attached to their respective battalions, and *battery aid men* are with their respective batteries.

(3) The *battalion surgeon* must keep abreast the situation in order to close his aid station in time to accompany the battalion in a change of position.

(4) *Aid stations* are established, at least partially, whenever the battalion occupies a position.

(5) *Reserve battalions.*—Artillery is not ordinarily held in reserve, although it may withhold its fire while occupying a position.

■ 98. DIVISION MEDICAL SERVICE IN THE ATTACK.—*a. General.*—The difficulties encountered by the division medical service in the attack are associated with—

(1) *Heavier casualty rate.*—In general, the attacker may be expected to suffer heavier casualties than the defender until the defense is disrupted and disorganized.

(2) *Maintaining contact with the medical detachments of attacking units.*—There is usually no regular battle line upon which the division medical service may adjust its dispositions. Contact with attack units becomes an individual problem with each aid station. Some aid stations may become so far advanced that their evacuation is most difficult, while the holding up of units on their flanks may prevent the advance of collecting stations.

(3) *Maneuver.*—The main attack is usually launched at the flank of the defender in order to avoid, if possible, the better organized portions of his position. This maneuver increases the area occupied by the attacker and, if it is wide, may require the duplication of medical installations.

b. Attack in a meeting engagement.—In a meeting engagement the time available for medical planning is considerably reduced, and there is rarely time for detailed reconnaissances prior to the issuing of orders. Orders, both those received and those issued, are apt to be in fragmentary form. Insofar as the medical command is concerned, boundaries between units may be in doubt, the locations and formations of attacking units uncertain, and friendly artillery positions and other important locations unknown. Communications are slow and uncertain. So far as possible, these difficulties are obviated by assigning missions to the subordinate elements of the division medical unit, and leaving to these subordinate commanders the decisions concerning the details. An effective reserve of medical means must be retained until the situation is clarified, when adjustments of the medical service may be made. Most important to its employment in a meeting engagement are the dispositions of the division medical unit on the march. (See par. 92.)

c. Planned attacks.—When time is available to plan the medical service for the attack—

(1) Adequate reconnaissances are made, detailed plans drawn, and complete orders issued.

(2) Subordinate elements are moved to their initial battle positions prior to the launching of the attack.

(3) Personnel are afforded every opportunity to rest.

(4) Supplies are replenished.

(5) Contact with medical detachments is established early.

■ 99. COLLECTION IN THE ATTACK.—*a. General.*—The general nature of the operation of collection is no different in the attack than in other forms of combat. (See ch. 5.)

b. Liaison.—Whenever possible and practicable, liaison agents should be reported to medical detachments prior to the launching of the attack. In meeting engagements this will usually be impossible, and liaison agents must be sent forward to locate aid stations that are already established. (See also par. 98a(2).)

c. Litter bearers.—Initially, aid stations may not be established, and casualties may have to be evacuated from the axes of advance of the combat elements. If movement is rapid, the bearers of the battalion sections may not have cleared the field thoroughly, and the bearer squads of the collecting unit may have to search the field. As the attack succeeds, and resistance becomes weaker, ambulances may be pushed well forward to lessen the burden upon litter bearers.

d. Collecting station.—Only so much of a collecting station should be established as is required or for which immediate need can be foreseen. When established, it should be well forward in order to forestall the necessity for early movement as the combat troops advance. Until it is established, the collecting station section advances along a designated axis so that it may maintain contact both with its own litter bearers and with the supporting ambulance unit. If the combat elements, supported by the collecting unit, are operating on a wide front, it may become necessary for it either to operate two collecting stations or to establish a collecting post or posts toward one or both flanks. When movement of a collecting station is necessary, it is ordinarily moved by echelon. A fraction, usually about one-half, is closed, loaded, moved to the new location, and established. As soon as it is operating and information of the new location has reached all dependent agencies, the old station may be closed and this fraction moved to the new location, provided all the casualties of the latter have been evacuated.

■ 100. DIVISION AMBULANCES IN THE ATTACK.—Ambulance service in the attack is normal. Advanced ambulance shuttles are indicated when movement is rapid and when enemy

resistance weakens to the point of permitting their use with comparative safety. Ambulances may also be used in the movement of collecting stations.

■ 101. CLEARING IN THE ATTACK.—*a.* The clearing station should be established well forward, within 4 or 5 miles from the line of departure, when feasible.

b. In meeting engagements, and when enemy covering forces must be pushed in and the position developed before the attack can be fully planned, it will be necessary to establish a clearing station initially behind the forces so engaged. When the plan for the attack is developed, it may be found that the initial location of the clearing station is not suitable. In such an event the station must be moved by echelon to a suitable location.

c. In other situations, the main attack may be launched at such a distance from the secondary attack that no single location for a clearing station is satisfactory to all elements of the division. The station must be split, in such situations, and two clearing stations operated.

CHAPTER 11

MEDICAL SERVICE IN DEFENSE

■ 102. **GENERAL CHARACTERISTICS OF DEFENSE.**—The characteristics of defense vary so much with the terrain and the situation that extensive generalizations are unsafe. However, the tactics of defensive combat are essentially to develop the maximum firepower against an advancing enemy, conserve our personnel by dispositions and utilization of terrain and obstacles, and thereby stop the enemy's advance or create a situation favorable to offensive action on our part. If the enemy succeed in penetrating the defense, he is expelled by one or more counterattacks. If these fail, or if the ruptures were so great as to make their use impracticable, the counter-attack is made by general reserves. These are limited attacks and are not to be confused with counteroffensive operations. (See par. 109.)

■ 103. **TYPES OF DEFENSE.**—A defense may be assumed under the following circumstances:

a. Where time permits prior to the enemy's attack, extensive organization of the terrain is made based on reconnaissance and detailed dispositions.

b. Where time does not permit, or the defense is assumed from a meeting engagement, extensive organization of the defensive position cannot be accomplished. If the action of the enemy permits, the detailed organization is carried out subsequently or concurrently with the defense.

c. Delaying action is a method of defense where protracted retention of any one position initially is not intended. It may or may not, depending upon the mission, terminate in the organization and protracted defense of a final position. This variety of defense, as well as defense of river lines, is treated in subsequent chapters.

■ 104. **DEFENSIVE POSITIONS.**—A complete defensive position includes a battle position and an outpost.

a. *Battle position.*—An organized battle position is built around a series of tactical localities, the retention of which will insure the integrity of the position. The organization

embraces a series of mutually supporting defensive areas, with trenches, obstacles, and emplacements for individual weapons. The defensive areas are distributed irregularly and in depth throughout the organized belt.

(1) The *main line of resistance* is that at the forward boundary of the battle position designated to coordinate the defensive fires of all units and supporting weapons. It is a series of distinct, but mutually supporting, defense areas. These areas are not located on a regular line. While the main line of resistance follows a general direction, each defense area is so located that it takes full advantage of the terrain not only in the defense of that particular sector but also, with its own fire, to support the defense areas to either flank and to deny to the enemy the intervening unoccupied ground.

(2) *Regimental reserve line*.—The line designated to coordinate the location and action of the regimental reserves in a battle position is termed the regimental reserve line. Elements on the regimental reserve line may be held mobile in readiness to counterattack or to occupy one of several positions previously selected and organized; or they may be posted initially for the defense of selected points. The organization and defense of the regimental reserve line is similar to that executed on the main line of resistance.

b. Outpost.—The outpost position of a large force is usually organized; that of smaller forces is rarely so. For a general discussion of outposts, see paragraph 88.

c. Frontages.—The frontages assigned to units in the defense vary with the terrain and the time and means available to the enemy. An infantry battalion, as a part of a larger force and with flanks protected by other troops on average terrain, can hold not to exceed 1,500 yards. In situations when it is desired to effect economy of force, or on especially favorable terrain, a battalion may defend wider fronts. On average terrain, and under favorable conditions, a division with flanks protected may defend against a strong attack a front up to 10,000 yards.

■ 105. CHARACTERISTICS OF DEFENSE INFLUENCING MEDICAL SERVICE.—It is not to be expected that all of the following

characteristics of defense will apply to every defense situation. However, the more important, which may be encountered and which will influence the medical service, are—

a. The fortification of a position is limited only by the time and facilities available. Protection is, however, secured by the maximum utilization of obstacles, concealment, the distribution of defenses in depth and in width, and their adaptation to the terrain. Medical installations in forward areas should be protected by a degree of organization of the ground comparable to that effected by combat troops. In the more elaborate field fortifications, gas-proof dugouts should be constructed for aid stations. Collecting stations, although usually located above ground or in cellars, should be similarly protected. From this upper limit of protective construction, the amount of organization will vary downward to foxholes for company aid men and litter bearers, and improvement of the aid station site with logs, stones, or other materials at hand. When the plan of a field fortification contemplates such sharp turns in trenches or other features that will make the removal of patients by litter impossible, it is the duty of the unit surgeon to bring the matter to the attention of the unit commander.

b. The width of the sectors assigned to infantry units varies with the defensive strength of the various parts of the position, the relative importance of the sectors, the degree of control required, and the number and strength of units available for the entire defense. In the allotment of medical means this distribution of units in the defense must be considered, both as concerns attached medical personnel and the division medical service.

c. The occupation of a defensive position is preceded by a more or less detailed reconnaissance as permitted by the situation. In general, medical planning can be more thorough and more detailed in defense than in attack.

d. If contact with the enemy has not been made, the command is usually developed into an assembly position preliminary to the deployment for the defense.

e. The defense, no less than the offense, must whenever possible act with the effect of surprise. This affects the loca-

tion and degree of concealment of medical installations, and the movement of medical units.

f. Whenever practicable, the defense is conducted along mobile lines. Mobility is acquired, among other ways, by distribution of forces in depth and by holding out reserves. The distribution of forces in depth, as well as the possibility of enemy penetrations of the position without actually disrupting it, requires that medical installations be located, in general, farther toward the rear than in the attack. If certain sectors are to be defended at all costs, the medical service of those sectors may be planned accordingly.

g. If the enemy attack succeeds in penetrating the defensive position, a counterattack may be launched to eject the enemy and restore the integrity of the position. All medical elements must be prepared to support a counterattack upon short notice. Counterattacks may be launched without delay to forestall the enemy's consolidation of his gains. Within the battle position, counterattacks are made ordinarily with local reserves; but, when the regimental reserve line has been seriously disrupted, general reserves are employed.

h. The occupation of the defensive position by large units is, wherever practicable, covered by outposts and covering detachments located at sufficient distance from the main line of resistance to prevent the occupying forces from being taken under observed fire by hostile light artillery. The situation determines whether the outposts retain their position after the occupation of the main line of resistance has been completed and whether the outposts shall make a determined resistance to the advance of the enemy. The medical service of outposts is an important item in the medical service of the defense, particularly when outposts are expected to resist.

i. When the situation permits, mobile covering detachments operate well in front and toward exposed flanks of the defensive position. Medical service must be provided for such security detachments.

j. Persistent gas has especial defensive value. This will affect casualties among enemy prisoners of war, and may involve units in counterattacks.

■ 106. ATTACHED MEDICAL PERSONNEL IN POSITION DEFENSE.—

a. With infantry units.—(1) *General.*—Except when counter-attacking, infantry in the defense is relatively fixed in position. Both local and general reserves may be moved from time to time, but the units in forward defensive localities indulge in little movement. This permits of a greater degree of initial organization of the medical service than in the attack. Casualties will occur in well-defined areas, the locations of which are known in advance.

(2) Since the battle position consists of a series of defense areas, each occupied and defended by a battalion in the usual situation, *battalion medical sections* are attached to their respective battalions.

(a) The allotment of company aid men depends upon the situation. The organization of a defense area varies with the terrain and other factors. It consists of one or more mutually supporting subdivisions, each occupied normally by a rifle company. The routine allotment of two company aid men to each company in defense is unsound. The organization of any particular company defense area may be such that more than two company aid men, rarely less, will be required. On the other hand, the heavy weapons company may be so distributed throughout the defense area that it cannot effectively employ company aid men but can be provided such medical service by the aid men of the rifle elements in the same localities. Each defense area must be reconnoitered and studied by the responsible surgeon with a view to distributing his medical means to the best advantage.

(b) The same considerations, affecting the allotment of company aid men, also determine the distribution of litter squads. (See (a) above.) The probable areas of casualty density, the garrisons of the several areas, the distances from the aid station, the character of the litter routes, and the requirements of the reserve must all be considered. Litter squads take their assigned posts and organize them for their protection during periods of inactivity. They also improve the protection of their litter routes as much as time and facilities will permit.

(c) *Aid stations.*—To avoid being involved in minor penetrations of the defense area, the battalion aid station is

usually located somewhat farther to the rear than in the attack. However, the terrain and other considerations may force the location of the aid station well forward. The exact site is determined by the individual characteristics of each defense area and the situation. For those units occupying defensive positions, the aid station is completely established, but it is kept mobile with those units held in mobile reserve. (See (3) below.) When established, the protection offered by the terrain is increased as much as possible by artificial means.

(3) *Headquarters medical section.*—When the regimental reserve is kept mobile for employment in rapid counter-strokes, rather than disposed on the regimental reserve line, the regimental aid station may be established to serve it until such time as it is committed. (See par. 36a(1).)

b. With artillery units.—When artillery is in position, its medical service is the same regardless of the character of the operations. (See par. 97b.) In defense, artillery is distributed in greater depth than in the attack, although this affects the areas occupied by large forces of artillery more than it does the size of individual battalion positions. In general, artillery positions are more stable than in attack, although movement may be required for protection or for the support of counterattacks by general reserves.

c. Deployment (par. 105d).—The medical service during deployment for the defense is the same as in any deployment. (See par. 97a(3)).

■ 107. DIVISION MEDICAL SERVICE IN DEFENSE.—*a. General.*—In general, because of fewer casualties, better opportunity for planning, more time for installing, and less movement of combat elements, the medical service of the defense is less difficult than in other operations. However, difficulties may be encountered as follows:

(1) *Hostile artillery and air action in rear areas.*—The attacker ordinarily has superiority in artillery and directs much of his effort toward disorganizing communications and interdiction of movement in rear of the battle position. Movement of casualties may be interrupted, or even denied during daylight hours.

(2) *Support of counterstrokes* (par. 105g).—If a large reserve is held, medical reserves must be held in proper proportion and located advantageously to support any counter blow.

(3) *Preservation of secrecy*.—Medical installations, no less than others, furnish the attacker with keys to the arrangement of the battle position. This fact will influence the location and disposition of medical units and installations.

b. Collection in defense.—(1) *Collecting station*.—The location of the collecting station depends upon the depth and general arrangement of the battle position, and upon the terrain. It should invariably be located in rear of the regimental reserve line in order to avoid being caught in minor penetrations of the position. This will place it, in the average situation, between 1,500 and 2,500 yards in rear of the main line of resistance. The degree to which a collecting station is established in the defense is proportionate to the organization of the position and the deployment of associated combat elements for the defense. If the position in its front be thoroughly organized and occupied, the station is completely established and protected. Collecting units supporting mobile reserves, however, observe the general rules of collection in the attack. (See par. 99d.) When evacuation of collecting stations is irregular because of enemy interference, the facilities of such stations must be augmented accordingly.

(2) *Liaison*.—Contact with aid stations is established early, and every means is employed to make it effective. Whenever practicable, wire communication should be established between the collecting station and the CP of the combat team it is supporting.

(3) *Litter bearers*.—Commanders of bearer elements make thorough reconnaissances of bearer routes and select those offering the greatest net advantages in protection and facility of evacuation. Routes are improved to increase protection, to facilitate the use of wheeled litter carriers and, when practicable, the establishment of advanced ambulance shuttles. An estimate of the situation will indicate the proper allotment of bearer squads to the several aid stations. Provision must be made for the support of local reserves in counterattack.

c. Division ambulances in defense.—Hostile efforts to disrupt communications in rear of the battle position may make ambulance operations most difficult. Ambulance routes should be selected with this eventuality in mind, and relay posts chosen that will provide the maximum protection.

d. Clearing in defense.—Clearing in the defense is a normal operation. Because of the relative compactness of a defensive position, rarely will more than one clearing station be required for a division. To escape as much hostile artillery fire as possible, and to avoid being caught in deep envelopments of flanks of the position, it should be located centrally and well to the rear. Protection against hostile air action and the preservation of secrecy may require its concealment. As in the case of collecting stations, enemy interference may prevent the evacuation of the clearing station during daylight hours.

■ 108. OUTPOSTS AND OTHER SECURITY DETACHMENTS.—*a. Outposts.*—The general procedure for medical service of an outpost is set forth in paragraph 88. The medical service of an outpost of a defensive position is further influenced by the—

(1) *Mission of the outpost.*—If the mission require a determined resistance, the medical service becomes that of any defense.

(2) *Control of the outpost.*—(a) If each of the several sectors of the main battle position outposts its own front, the elements of the division medical service supporting such sectors undertake the medical support of the sector's outpost.

(b) If, on the other hand, the outpost operate under central control, the medical support must either be operated under central control or attached to the outpost. In either event, the elements of the division medical service engaged in this service should be taken from the reserve and, if attached, upon the termination of such duty should revert to the control of the division medical unit.

b. Other security detachments.—See paragraphs 105i and 90, in turn.

■ 109. COUNTEROFFENSIVE.—The counteroffensive is usually distinguished from the counterattack by the difference in objectives and in intention of the commander. In the counterattack, the commander's attitude remains defensive and he assumes the offensive only temporarily and with limited objectives as a means of preserving the defense. In the counteroffensive, the defensive attitude is discarded, and aggressive coordinated offensive action is initiated. In counteroffensive action, the medical service is similar to that of the attack.

CHAPTER 12

MEDICAL SERVICE OF RETROGRADE MOVEMENTS

	Paragraphs
SECTION I. General	110-111
II. Withdrawal from action.....	112-115
III. Delaying action.....	116-118

SECTION I

GENERAL

■ 110. DEFINITIONS.—While retrograde movements are a form of defensive operations, the medical problems associated with them are of sufficient importance to warrant their being considered in a separate chapter. A *retrograde movement* is any movement of a command to the rear, or away from the enemy. Such a movement may be further classified as follows:

a. A withdrawal from action is the operation of breaking off contact with an enemy force in order to initiate some other action. To constitute a withdrawal from action, however, the retrograde movement must be made pursuant to the will of the commander. (See also *c* below.)

b. A delaying action is an operation designed to prevent the uninterrupted advance of an enemy. The underlying idea in the execution of a delaying action is to gain time while avoiding decisive engagements.

c. A retirement is a retrograde movement in which a force seeks to regain freedom of action, the movement being part of a developed plan which has for its purpose the refusal of decisive combat under the situation that exists at the time. The force making the retrograde movement retains freedom of action. The movement is carefully coordinated and executed under close control.

■ 111. GENERAL MEDICAL CONSIDERATIONS.—The medical problems involved in retrograde movements vary between wide limits, depending upon the type of operation, the enemy reaction, and the general situation. A daylight withdrawal,

for example, is a very different operation from a retirement. It is impossible to lay down rules that are equally applicable to all types of retrograde movements. There are certain factors that must be considered in the medical planning of any retrograde movement. The more important of these are—

a. Time factor.—The number of casualties removed from any battlefield is dependent on *time* and *means*. In stabilized situations and in the advance, time is important only as it affects the physical well-being of the injured; it is not vital to the eventual accomplishment of the task. In retrograde movements, time is the vital factor; and its influence can be met only by means. This is to say that, as available time decreases, either means must be increased or casualties must be abandoned. There is no other solution.

b. Casualty rate.—Depending upon the type of operation, the enemy reaction, the terrain, and the weather, the casualty rate may be very heavy or may be negligible. All other factors being equal, so long as an aggressive enemy maintains contact with and denies freedom of action to the force making the retrograde movement, such operations are likely to be the most costly in casualties of all military operations. This possibility of heavy losses must always be considered in medical planning. The actual number of casualties will also depend upon the proportion of the retiring force in contact with the enemy; but these factors will determine the *rate* in those security detachments and other elements that are within the radius of hostile action.

c. Routes of evacuation may require careful planning. Principal routes may be congested with troops and material.

d. Medical installations.—(1) *Locations.*—Since the general direction of movement is *toward* rather than away from medical installations, they should be located initially considerably farther to the rear (*i. e.*, with reference to the enemy) than in other operations.

(2) *Completeness.*—Since time is such an important factor, every effort should be made by all medical echelons to evacuate all medical installations promptly and regularly, so that it does not become necessary to set up complete installations.

(3) *Displacement.*—Frequency of displacement will be determined by the rate of movement of the force, the terrain.

and considerations of security. Medical installations should be displaced before they are in danger of becoming involved in rear guard actions. In general, displacement should be by echelon as in other operations.

e. Medical service of security detachments (par. 90).—In order that the main body may not become involved in combat, the missions of security detachments ordinarily will require them to engage in serious combat if the enemy becomes too aggressive. Their medical service must be planned accordingly.

f. Medical service in retirement.—As defined in paragraph 110c, retirement is an operation in which the main body has broken contact and regained freedom of action. The operation is then conducted much as any march and the medical service becomes that of a march. (See ch. 9.)

SECTION II

WITHDRAWAL FROM ACTION

■ 112. CLASSIFICATION.—A withdrawal from action is classified as a *daylight withdrawal* when initiated during the hours of daylight, and as a *night withdrawal* when initiated and the bulk of the operation executed during the hours of darkness. The withdrawal from action begins when combat troops or service elements begin movement to the rear. The movement to the rear of reconnaissance parties or small security detachments is not the commencement of a withdrawal from action.

■ 113. DAYLIGHT WITHDRAWAL.—*a. General.*—A withdrawal by daylight involves such heavy losses and so great a degree of disorganization that it is usually preferable to hold out at all costs until nightfall and effect the withdrawal under cover of darkness (FM 100-5). It is rarely attempted except under strong hostile pressure, and then only to save the command from destruction. Secrecy is seldom possible in a daylight withdrawal.

b. Characteristics influencing medical service.—(1) Local commanders designate and place in position local covering forces to assist the engaged elements of their respective commands to break off the engagement and make their way to the rear. Local covering forces are formed from local re-

serves or supports. The commander of the entire force designates a general covering force or forces to cover the withdrawal of the troops engaged. It may cover the initial stages of withdrawal, or only a later stage, or both. The general covering force is usually formed from any available reserves with suitable attachments of artillery and other means. It may be necessary to sacrifice a covering force in order to save the bulk of the command. The medical service of these covering forces, both local and general, is that of comparable security detachments in other operations. (See par. 90.)

(2) Subordinate infantry units in contact with the enemy move straight to the rear in deployed lines until they have been disengaged themselves. Then they move by the most practicable routes, usually in approach march formations, to assembly positions designated by local commanders for their own units. Each subordinate unit is conducted from its own assembly position to the assembly position of the next higher unit. When a safe distance from the enemy, march columns are formed and the march is conducted as any march in the presence of the enemy. Covering detachments hold or delay the enemy until the main body is beyond the immediate danger of enemy interference. The medical service of the initial stages of withdrawal is similar to that of the approach march (par. 97a(3)(c)); and, after march columns have been formed, that of the march (ch. 9).

(3) The artillery with the main forces supports the front-line units while they are engaged in breaking off the action. In some cases, batteries or individual guns may have to be attached to local covering forces remaining in contact. Artillery generally displaces to the rear by echelon. The artillery of the main body may continue the support of the covering forces indefinitely, or it may, after the initial stages, take its place in the march columns. The medical service with artillery units is normal.

■ 114. NIGHT WITHDRAWAL.—*a. General.*—The withdrawal of the greater part of the forces engaged commences at night-fall; only weak elements are left in immediate contact with the enemy. These elements left in contact are known as the *covering shell* or screen.

b. Characteristics influencing medical service.—(1) The covering shell (see *a* above) is the only covering force operating prior to the withdrawal. It consists of small groups from rifle and machine-gun elements of each front-line battalion left in contact with the enemy *without change of disposition*. The covering shell engages in activity throughout the night to create the false impression of continuing the defense or of intended renewal of the attack on the following day. It maintains normal fires and engages in active patrolling. At an appropriate time before dawn it withdraws secretly and makes its way back to the main body.

(2) When a night withdrawal is followed by a retirement which continues through daylight, a rear guard is constituted.

(3) The withdrawal is executed on a broad front; troops retire in small columns and, after passing the covering position, are assembled into larger units at designated initial points. Unless there is enemy interference, the assembly of units into march columns is usually accomplished much nearer the front than in the case of daylight withdrawals.

(4) A part of the artillery is left in position to support the covering shell. The artillery with the main forces is usually withdrawn by echelon in time to take its position in the march columns.

(5) Secrecy is of the utmost importance.

■ 115. MEDICAL SERVICE IN WITHDRAWAL.—*a. Covering forces* (pars. 88, 90, and 108).—The medical service of a withdrawing covering force is governed by the same principles as apply to other withdrawing forces.

b. Attached medical personnel.—(1) *With Infantry.*—(a) Suitable detachments are made to local covering forces remaining in position. In the initial stages of the withdrawal, between the time of breaking contact and the formation of march columns, the general principles of unit medical service are those of the approach march. (See par. 97a(3)(c).) The single great difference lies in the influence of the time factor.

(b) The operations of clearing the field and of collection must be combined. Aid stations cannot be established during

the movement; wounded are given first aid and taken directly to the nearest axis of evacuation (c below).

(c) In daylight withdrawals especially it will be absolutely necessary to reenforce the attached medical personnel of infantry. The dispersion of elements due to the extended order, the probable heavy casualty rate, and the lack of time make it impossible for the medical sections to accomplish their task without assistance. These reenforcements can be had from two sources. Bearer elements of collecting units should be utilized insofar as they can be spared from other pressing requirements. However, such reenforcements from medical units may prove inadequate, and in the initial stages of any withdrawal litters should be issued by medical sections to the infantry companies, and the personnel of these companies must assist in the evacuation of their own casualties.

(d) When march columns are formed, the unit medical service becomes that of the march. (See ch. 9.)

(2) *With Artillery.*—Suitable detachments are made to the elements of artillery units attached to covering forces. Other unit medical service with the artillery is normal.

c. *Collection.*—(1) If established at all, collecting stations must be located *in rear of the general line of battalion assembly areas*. Any stations operating forward of that line must be closed prior to the initiation of the withdrawal and moved to the rear at the earliest possible moment.

(2) Advanced ambulance shuttles are operated on all practicable axes of evacuation during the initial stages of withdrawal. The ambulance loading posts are mobile, keeping generally abreast the withdrawing infantry elements. Wounded are brought to such axes, loaded into ambulances, and evacuated. If no collecting stations be established, such casualties are taken directly to the clearing station. These mobile ambulance loading posts are almost indispensable in the initial stages of a withdrawal from action. If, however, it is impossible to operate them, casualties must be carried to the assembly areas. Even the majority of the walking wounded will require assistance, since they will be unable to maintain the pace of the able-bodied.

d. Division ambulances.—Ambulances must ordinarily be attached to covering forces, including the covering shell. The advanced ambulance shuttles are operated in connection with collection. (See *c* above.)

e. Clearing.—During the initial stages of a withdrawal, the clearing station already in operation will serve. Every effort must be made to have it evacuated promptly and kept relatively free of patients by the supporting medical unit of the higher echelon. It should be displaced to the rear before retirement is begun.

SECTION III

DELAYING ACTION

■ 116. CLASSIFICATION.—Delaying actions may consist of strong resistance on a single position, or limited resistance on successive positions.

■ 117. DELAYING ACTION ON SINGLE POSITION.—*a. General characteristics.*—Delaying action on a single position is similar to a defense of position with the following essential differences:

(1) The intention of the commander is to remain in position only for a limited time, after which he will withdraw.

(2) Units occupy relatively wide fronts and the position is not usually as well organized as in a sustained defense.

b. Medical service.—The medical service is that of defense, with complete plans for withdrawal in readiness.

■ 118. DELAYING ACTION ON SUCCESSIVE POSITIONS.—*a. General characteristics.*—(1) Successive positions from front to rear are selected in advance. The distance between such positions will vary with the terrain, the nature of the enemy, and the situation; but, in general, they are far enough apart that the enemy cannot attack more than one position without displacing his artillery forward. When practicable, they may be selected sufficiently far apart to permit a night withdrawal from each.

(2) The command may be divided into two balanced forces and the two positions nearest the enemy occupied at the same time. When the enemy has fully developed for an

attack on the position nearest him, but before his attack has reached proportions fixing the delaying force in position, the latter withdraws *through* the second position and occupies the third. This action forces the enemy to reassemble his troops, advance, and develop for an attack on the second position. This operation is repeated throughout the successive positions. In some situations it will be necessary for security detachments to delay between positions.

(3) Units occupy extended fronts, security detachments may operate on the flanks, and the plans for withdrawal are made when the position is occupied.

b. Medical service.—(1) *In position.*—(a) *Attached medical personnel.*—Normal operations, in general, conform to that for a defense of position. The extended fronts may require some dividing of aid stations.

(b) *Collection.*—When two successive positions are occupied simultaneously it will usually be necessary to divide collecting units. The collection when in position is, in general, a normal operation. The locations of collecting stations will depend upon the terrain and the distance between positions. Extended fronts, the defensive nature of the operation, and the intention of withdrawing indicate locations well to the rear. Advanced ambulance shuttles must be used to the limit of practicability.

(c) *Division ambulances.*—Operations normal, in general. It may be necessary to attach some to front line units occupying isolated positions.

(d) *Clearing.*—Operations normal, in general. The clearing station should be located well to the rear and, when practicable, so placed that it can support two positions without displacement.

(2) *During withdrawal.*—See paragraph 115.

CHAPTER 13

SPECIAL OPERATIONS

	Paragraphs
SECTION I. Attack of river lines.....	119-121
II. Defense against river crossings.....	122-123
III. Pursuit.....	124-126
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SECTION I

ATTACK OF RIVER LINES

■ 119. GENERAL CONSIDERATIONS.—*a. Definitions.*—As used herein, the attack of a river line refers to the forced crossing of an unfordable stream that cannot be crossed with footbridge equipage alone. The term “river line” signifies the water edge on the defender’s side of the stream.

b. Phases of the operation.—An attack against a river line may be divided into three phases:

(1) Preparation for the crossing.

(2) The operation of actually crossing the river by means of ferrying and bridging.

(3) The continuation of the attack to obtain possession of the controlling terrain on the defender’s side of the river.

■ 120. CHARACTERISTICS INFLUENCING MEDICAL SERVICE.—*a. General.*—The phase of preparation, other than the requirements of secrecy, is of no special interest to the medical service. The continuation of the attack after the actual crossing has been made is similar to any attack and the procedure set forth in chapter 10 applies.

b. Forcing the crossing.—(1) The general method of employing main and secondary attacks applies in this operation. It is frequently extended to include one or more feints in addition to the main and secondary attacks. The crossing fronts of these several efforts may be more widely separated than in other types of attack, since the river affords protection against counterattacks by the enemy.

(2) The troops, ordinarily Infantry with machine guns but without animals, which are detailed to make the initial crossing, advance to the river on a wide front and in as many columns as there are ferrying points. Squad boats and pontoons are placed in the water.

(3) The supporting troops go into position to support the operation by fire.

(4) When the hour for crossing arrives, usually just before dawn, the first echelon of the assault troops crosses. It is followed as quickly as possible by the second and succeeding echelons. In general, the crossing is continued by ferrying until bridges are completed. The first troops to cross, after the covering force has secured the ferrying area, initiates action to secure the selected bridge site. As other troops land, they move to the flanks of the leading battalion. The advance to the final bridgehead position is made as rapidly as conditions permit.

(5) This phase of the operation is completed when a bridgehead is secured. A bridgehead is a position which, when held by the attacker, protects the bridging operations from ground observation, and prevents the defender from bringing effective artillery fire upon the bridge. As soon as a bridgehead is secured, construction of a ponton bridge is begun. The operation proceeds as any attack after the stream has been bridged.

■ 121. MEDICAL SERVICE OF THE ATTACK OF A RIVER LINE.—*a. Attached medical personnel.*—Company aid men are attached to their respective companies and cross with them. Litter squads are distributed among the boats roughly in proportion to the combat elements. The aid station crosses with the elements of the battalion headquarters. Equipment must be carried by hand. Once across the river, the unit medical service becomes that of any attack. (See ch. 10.)

b. Collection.—Initially, collecting stations are established on the attacker's side of the river. Contact agents and bearer squads are sent across the river with the second and succeeding echelons. They establish contact with the aid stations, evacuate the casualties to the river line, and load them on

the returning small boats. Other bearer squads unload the casualties on the attacker's side of the river and deliver them to the collecting station. As soon as practicable, collecting stations should be displaced to the defender's side of the river. Ambulance loading posts are established on the attacker's side until the bridge is available to ambulance traffic.

c. Division ambulances.—Operation normal. (See *b* above.) The demands of other traffic on the bridges may preclude their use by ambulances until late in the operation.

d. Clearing.—Operation normal. The clearing station should remain on the attacker's side of the river until the entire operation is completed.

SECTION II

DEFENSE AGAINST RIVER CROSSINGS

■ 122. GENERAL CONSIDERATIONS.—*a. Types of river defense.*—There are three general types of river defense:

(1) *Cordon defense.*—This consists of an organized defense behind a river line, similar to any position defense, in which the river line is used as an obstacle to strengthen the position. In this method of river defense, the main line of resistance is placed on or near the river bank.

(2) *Mobile defense.*—This is a type of defense in which the river line is held lightly and the bulk of the defending force is held with a view to expelling enemy crossings by counter-attack.

(3) *Delaying and rear guard actions.*—These are merely delaying and rear guard actions which exploit, temporarily, the obstacle value of the river.

b. Reconnaissance elements.—Reconnaissance agencies are extremely active, both on the attacker's side of the river as he approaches and on the river line. Medical service must be provided.

■ 123. MEDICAL SERVICE OF DEFENSE OF RIVER LINE.—For the medical service of defenses, see chapter 11; for that of withdrawal, see chapter 12.

SECTION III

PURSUIT

■ 124. **GENERAL CONSIDERATIONS.**—Pursuit of a decisively defeated enemy is launched to accomplish the annihilation of the enemy force. Direct pressure against the retreating forces is combined with an outflanking or encircling maneuver designed to place our own troops across the enemy's lines of retreat. In the conduct of a pursuit, all arms and units are pushed to the extreme limit of their physical endurance. Losses and fatigue are not permitted to interfere with the prompt start and vigorous prosecution of the pursuit.

■ 125. **MEDICAL SERVICE OF THE DIRECT PRESSURE FORCE.**—The direct pressure is maintained by elements in contact with the enemy at the time pursuit is instituted. Reserves may also be committed in the direct pressure. The medical service is that of a fast-moving attack. Because of the enemy's disorganization, if not demoralization, severe battle losses are not to be expected, but fatigue will contribute to the casualty rate.

■ 126. **MEDICAL SERVICE OF AN ENCIRCLING FORCE.**—*a. General.*—One or more encircling forces are organized, either from general reserves or other available troops, and dispatched to strike the enemy's flank and rear and to block his retreat. During this movement an encircling force follows routes at such a distance from the enemy flank that it will not become seriously engaged before reaching its objective. The encircling force may consist of horse Cavalry, motorized, or armored forces.

b. Attached medical personnel.—Normal operations.

c. Collection.—A suitable detachment of collecting personnel is attached to the encircling force.

d. Division ambulances are attached to the encircling force.

e. Clearing.—Until secure communications can be established between an encircling force and the medical agencies supporting the direct pressure force, it will be difficult to clear the encircling force of its casualties. However, provi-

sion must be made for the temporary care and treatment of such casualties by attaching to the encircling force a detachment of clearing personnel with suitable unit equipment. This detachment will establish and operate a temporary hospital along the route of the encircling force and undertake the definitive treatment of the sick and injured until such time as they can be evacuated.

f. Supply.—Because of uncertain communications, medical personnel with the encircling force should take along sufficient medical supplies to last until communications can be established.

SECTION IV

OTHER SPECIAL OPERATIONS

■ 127. NIGHT OPERATIONS.—*a. General.*—The increasing effectiveness of aviation and mechanized forces is making it more and more necessary to conduct military operations under cover of darkness or fog. Even when not in contact with the enemy, night marches are now the normal procedure. Night operations may be classified as those carried out behind covering forces (*e. g.*, marches), and operations unprotected by other troops (*e. g.*, attacks and withdrawals). For the medical aspects of a night withdrawal see paragraph 115.

b. Night attacks.—Night attacks are usually undertaken only on a limited scale and with a limited objective. The troops participating, including service elements, may be rehearsed in a rear area for a particular operation. Each officer and man should wear some distinguishing mark which can be easily recognized in the dark. Secrecy is most essential.

■ 128. MEDICAL SERVICE OF NIGHT OPERATIONS.—*a. Behind covering forces.*—The medical service of night marches and of development under cover of darkness differs little in general principles from that of similar operations in daylight. Control is difficult at night, and some decentralization of medical responsibility will usually be necessary. The necessity for strict secrecy will retard and otherwise handicap medical service.

b. Night attacks.—(1) *General.*—The attack will be of short duration; usually success or failure will be determined quickly. If the attack fail initially, it is very difficult to effect before daylight the reorganization necessary to renew it.

(2) *Training.*—If the operation is rehearsed in advance, medical personnel who are to participate should rehearse with the combat troops.

(3) *Attached medical personnel.*—Company aid men are attached to the companies. If the objective is near enough to the line of departure, aid stations should be established on the line of departure as soon as the attack is launched. Otherwise the aid station groups follow the axis of the attack and establish stations when and where indicated. Litter squads are easily lost. The attack moves so rapidly and its result is determined so quickly that, rather than have individual squads follow the assault echelons, it is preferable to deploy the litter squads under control and have them systematically search the field after the combat elements have moved on. When the field is cleared the aid station is moved to the new position.

(4) *Collection.*—Considerations of secrecy will ordinarily prohibit the establishment of a collecting station prior to the launching of the attack. However, the site should be selected in advance and liaison agents reported to the various medical sections. As soon as the attacking force jumps off, the collecting unit may move into position and establish station.

(5) Other division medical service is normal.

■ 129. PROTECTION OF LINES OF COMMUNICATION.—The troops engaged in the protection of lines of communication are usually organized like and operate similarly to security detachments. For the medical service of such forces see paragraph 90.

■ 130. MOUNTAIN WARFARE.—*a. General considerations.*—Prolonged fighting on a large scale may occur in mountainous terrain. The lack of communications makes supply and evacuation particularly difficult. From necessity, the main operations are usually along the principal roads found in the valleys. The absence of lateral communications may make

central control impossible, and medical service may have to be decentralized to the several columns.

b. Medical service.—The terrain and the situation will require modifications in method, but the general principles of medical service apply. Until they can be brought to motor roads, casualties may have to be evacuated by various improvised means. The use of collecting stations may not be feasible in many situations, and casualties will have to be prepared at aid stations for extended evacuation. Since operations in mountains move very slowly, this duty can be undertaken by attached medical personnel.

APPENDIX I

CHECK LIST OF COMPLETE FORMAL MEDICAL PLAN

1. SUPPLY.

- a.* Medical dump(s); location, units served, time of opening and closing. (Div., corps, army.)
- b.* Medical depot(s); same information as for dumps. (Army.)
- c.* Other instructions desired regarding medical supply.

2. EVACUATION.

- a. Casualties.*—Pertinent data regarding the following installations, such as location, units served, time of opening and closing.

(1) Personnel:

- (*a*) Aid station(s). (Bn. and regt.)
- (*b*) Collecting station(s). (Div., corps, army.)
- (*c*) Clearing station(s). (Div., corps, army.)
- (*d*) Hospital(s): Hospital stations. (Corps, army.)

(2) Animals:

- (*a*) Veterinary aid station(s). (Regt.)
- (*b*) Veterinary clearing station(s). (Div.)
- (*c*) Veterinary evacuation hospital(s) (Army.)
- (*d*) Veterinary convalescent hospital(s). (Army.)

b. Prisoners of war.

- (1) Arrangements for security of sick and injured prisoners of war.
- (2) Utilization of able-bodied prisoners of war to augment the medical service.

3. TRAFFIC.

- a. Circulation.*—Special priorities desired for ambulances or other medical transport.

b. Construction and maintenance of routes.

- (1) *Roads.*—Necessary construction and maintenance of roads and bridges in vicinity of medical installations.
- (2) *Railroads.*—Necessary construction and maintenance of sidings at evacuations and general hospitals.

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4. **TRAINS.**—Recommendations with reference to the movement of medical trains on the march, release from march control, and control in bivouac.
5. **PERSONNEL.**
 - a. *Stragglers.*—Arrangements for the disposition of stragglers and malingerers in medical installations.
 - b. *Mail.*—Arrangements for postal service for medical units and installations.
 - c. *Shelter.*—Shelter required for medical units and installations.
6. **MISCELLANEOUS.**
 - a. Arrangements for evacuation by higher echelon(s).
 - b. Attachments of medical units to subordinate echelons.
 - c. Movement(s) of medical units.

APPENDIX II

CHECK LIST OF COMPLETE FORMAL UNIT PLAN

1. **SITUATION.**—This paragraph is a résumé of the situation as it affects the operations of the unit. It sets forth the premises upon which the plan is based. These may include—
 - a. So much of the information of the enemy as affects the operations of the unit.
 - b. The decision and general plan of the next higher commander.
 - c. Supplemental decisions of the commander (or responsible staff officers) that affect the operations of the unit.
 - d. The conclusions arrived at in the analysis of the elements of the medical situation. (See par. 17b.)
2. **DECISION.**—This is the decision of the unit commander arrived at after an estimate of the situation. (See par. 20.)
3. **ALLOTMENT OF TASKS.**—In a separate subparagraph each task required by the decision is allotted to a subordinate unit or agency. *What* each subordinate unit is to do must always be stated clearly. *When* and *why* it is to be done may be stated; but *how* it is to be done should be left to the subordinate commander, unless there be a compelling reason to limit his discretion.
4. **SUPPLY AND ADMINISTRATION.**
 - a. *Supply.*—The plan for the procurement of supplies of all classes, and their distribution to subordinate units. Arrangements for rationing of units not provided with kitchen facilities.
 - b. *Administration.*—Special instructions to the unit staff; special reports and returns required; special instructions regarding the administration of patients.
5. **COMMUNICATIONS.**—Command posts and plan for maintaining communications within the unit.

APPENDIX III

INDIVIDUAL EQUIPMENT OF MEDICAL DEPARTMENT OFFICERS AND ENLISTED MEN

■ 1. MEDICAL.—*a. Officers.*—The kit, medical officer's, includes—

Article	Unit	Quantity
Kit:		
Cante ring strap.....	Each.....	1
Insert, type II.....	do.....	1
Litter strap.....	do.....	1
Pouch, canvas.....	do.....	1
Pouch, lace.....	do.....	2
Vial, hard rubber, ½-ounce, containing.....	do.....	6
Compound cathartic pill or tab (mercurous chloride), USPX.		
Glycyrrhiza and opium compound mixture, USP Tab.		
Acetophenetidin, USP, 5 gr. tab.		
Ipecac and opium powder, USP, 5 gr. tab.		
Quinine sulfate, USP, 5 gr. tab.		
Plaster, adhesive, 1-inch.....	Spool.....	1
Syringe, hypodermic:		
Complete.....	Each.....	1
Needle.....	do.....	12
Pencil.....	do.....	1
Box, tablet, folding.....	Dozen.....	1
Pin, safety, medium.....	Card.....	1
Thermometer, clinical.....	Each.....	1
Iodine swab, 6.....	Boxes.....	2
Bandage, gauze, compressed, 3-inch.....	Each.....	5
Tourniquet, field.....	do.....	1
Case, instrument, medical officer's, containing.....	do.....	1
Container:		
Case, canvas, medical officer's.....	do.....	1
Metal, for knives, 5½ by 1 by ¾ inch.....	do.....	1
Bistoury, sharp-pointed, straight, 1¾ inch.....	do.....	1
Forceps:		
Hemostatic, Abbey.....	do.....	1
Hemostatic, Jones, 5-inch.....	do.....	1
Tissue, spring, 4½-inch.....	do.....	1
Knife, operating, 1¼-inch.....	do.....	1

a. Officers.—The kit, medical officer's includes—Continued.

Article	Unit	Quantity
Case—Continued.		
Needle:		
Surgeon's regular, $\frac{3}{8}$ circle, sizes 6 and 10.....	Each.....	3
Uterine, size 5, half-circle.....	do.....	3
Scissors, 1 point sharp, $4\frac{1}{2}$ -inch.....	do.....	1
Suture, silk, braided, 3 sizes.....	Pkgs.....	3
Container, metal, No. 1.....	Each.....	1
Sterilizer, hypodermic needle.....	do.....	1
Emergency medical tag.....	Book.....	1

b. Noncommissioned officers.—The kit, medical, noncommissioned officer's includes—

Article	Unit	Quantity
Kit:		
Canteen ring strap.....	Each.....	2
Pouch, canvas.....	do.....	2
Pouch, lace.....	do.....	2
Suspender.....	do.....	1
<i>In right-hand pouch</i>		
Vial, hard rubber, $\frac{1}{2}$ ounce, containing.....	do.....	6
Acetophenetidin, USP, 5 gr. tab.		
Compound cathartic pill or tab (mercurous chloride), USPX.		
Glycyrrhiza and opium compound mixture, USP Tab.		
Ipecac and opium powder, USP, 5 gr. tab.		
Quinine sulfate, USP, 5 gr. tab.		
Plaster, adhesive, 1-inch.....	Spools.....	2
Syringe, hypodermic:		
Complete.....	Each.....	1
Needle.....	do.....	12
Pencil.....	do.....	1
Box, tablet, folding.....	Dozen.....	1
Pins, safety, large and medium, each.....	Card.....	1
Thermometer, clinical.....	Each.....	1
Iodine swab, 6.....	Box.....	1
Case, instrument, medical officer's. (For contents see contents of Kit, medical officer's).	Each.....	1
Kit:		
Insert, type II.....	do.....	1
Litter strap.....	do.....	2

b. Noncommissioned officers.—The kit, medical, noncommissioned officer's includes—Continued.

Article	Unit	Quantity
Container, metal, No. 1.....	Each.....	1
Sterilizer, hypodermic needle.....	do.....	1
Emergency medical tag.....	Book.....	1
<i>In left-hand pouch</i>		
Cotton, absorbent, compressed.....	Ounces.....	4
Gauze, plain, sterilized.....	Pkgs.....	4
Bandage:		
Gauze, compressed, 3-inch.....	Each.....	8
Triangular, compressed.....	do.....	4

c. Privates.—The kit, medical private's, includes—

Article	Unit	Quantity
Kit:		
Canteen ring strap.....	Each.....	2
Pouch, canvas.....	do.....	2
Pouch, lace.....	do.....	2
Suspender.....	do.....	1
<i>In right-hand pouch</i>		
Ammonia, aromatic spirit, USP.....	Ounces.....	2
Plaster, adhesive, 1-inch.....	Spool.....	1
Scissors, bandage.....	Each.....	1
Pin, safety, medium.....	Cards.....	2
Iodine swabs, 6.....	Boxes.....	2
Bandage, gauze, compressed, 3-inch.....	Each.....	12
Bandage, triangular, compressed.....	do.....	3
Case, instrument, enlisted men's, containing 1 forceps, hemostatic, and 1 scissors, double-blunt.....	do.....	1
Kit, insert, type I.....	do.....	1
Container, metal, No. 1.....	do.....	1
Flask, with cup.....	do.....	1
<i>In left-hand pouch</i>		
Pencil.....	do.....	1
Dressing, first aid, small.....	Pkgs.....	8
Kit, litter strap.....	Each.....	2
Emergency medical tag.....	Book.....	1

■ 2. DENTAL.—*a. Officers.*—The kit, dental officer's, includes—

Article	Unit	Quantity
Kit:		
Cante ring strap.....	Each.....	1
Insert, type I.....	do.....	1
Litter strap.....	do.....	1
Pouch, canvas.....	do.....	1
Pouch, lace.....	do.....	2
Procaine hydrochloride and epinephrine hypo tab.....	20.....	3
Cotton, absorbent, compressed.....	Ounce.....	1
Syringe, tonsil, laryngeal, and dental.....	Each.....	1
Stopper, rubber, No. 2.....	do.....	1
Bur, straight handpiece, Nos. ½, 2, and 6, each.....	Pkgs.....	2
Chisel, Nos. 5 and 48.....	Each.....	1
Cleaners, No. 2.....	Pkgs.....	2
Drill, No. 100, straight handpiece.....	Each.....	1
Elevator, Winter, Nos. 122 and 123.....	do.....	1
Excavator, Nos. 63 and 64.....	do.....	1
Explorer, No. 5.....	do.....	1
Forceps, Nos. 150 and 151.....	do.....	1
Holder, nerve broach.....	do.....	1
Lancet, exact, No. 1.....	do.....	1
Mirror, mouth.....	do.....	1
Pliers, No. 2, dressing.....	do.....	1
Plugger, Woodson, No. 1.....	do.....	1
Scaler, pyorrhea, Towner, No. 01-5.....	do.....	1
Syringe, dental, needle for, platino-iridium, 1-inch and 1½-inch canula.....	do.....	2
Towel, hand.....	do.....	2
Pencil.....	do.....	1
Iodine swab, 6.....	Box.....	1
Engine, bit holder.....	Each.....	1
Rubber, red.....	Sheet.....	1
Case, canvas:		
No. 1, for instruments.....	Each.....	1
No. 2, for burs.....	do.....	1
Container, metal:		
No. 1.....	do.....	2
No. 4.....	do.....	1
Sterilizer, hypodermic needle.....	do.....	1
Vial:		
Glass, 60-cc.....	do.....	1
Glass-stoppered.....	do.....	3
Emergency medical tag.....	Book.....	1

b. Privates.—The kit, dental private's, includes—

Article	Unit	Quantity
Kit:		
Cante ring strap.....	Each.....	2
Pouch, canvas.....	do.....	2
Pouch, lace.....	do.....	2
Suspender.....	do.....	1
<i>In right-hand pouch</i>		
Silver nitrate, USP.....	Ounce.....	1
Cement, germicidal.....	Box.....	1
Pliers, No. 122, smooth beak, office.....	Each.....	1
Shears, crown, universal.....	do.....	1
Spatula, cement.....	do.....	1
Syringe, water.....	do.....	1
Wire, bronze, ligature.....	Box.....	1
Towel, hand.....	Each.....	2
Pencil.....	do.....	1
Dressing, first-aid, small.....	Pkgs.....	2
Slab, square.....	Each.....	1
Kit, litter strap.....	do.....	2
Emergency medical tag.....	Book.....	1
<i>In left-hand pouch</i>		
Ammonia, aromatic spirit, USP.....	Ounces.....	2
Plaster, adhesive, 1-inch.....	Spool.....	1
Scissors, bandage.....	Each.....	1
Pin, safety, medium.....	Card.....	1
Iodine swab, 6.....	Box.....	1
Bandage, triangular, compressed.....	Each.....	12
Case, instrument, enlisted men's, containing 1 forceps, hemo- static, and 1 scissors, double-blunt.....	do.....	1
Kit, insert, type I.....	do.....	1
Container, metal, No. 1.....	do.....	1
Flask with cup.....	do.....	1

■ 3. VETERINARY.—*a. Officers.*—The kit, veterinary officer's, includes—

Article	Unit	Quantity
Kit:		
Cante ring strap.....	Each.....	1
Litter strap.....	do.....	1
Pouch, canvas.....	do.....	1
Pouch, lace.....	do.....	1

a. Officers.—The kit, veterinary officer's includes—Continued.

Article	Unit	Quantity
Bandage, muslin, 3-inch.....	Each.....	2
Cotton, absorbent, compressed.....	Ounce.....	1
Gauze, plain, sterilized.....	Pkg.....	1
Pencil.....	Each.....	1
Case, hypodermic tablets, veterinary, containing.....	do.....	1
½-gr. hypo tabs, arecoline hydrobromide, USD.....		20
3-gr. hypo tabs, butyn, NNR.....		20
Hypo tabs, eserine and pilocarpine compound.....		10
¼o-gr. hypo tabs, glyceryl trinitrate, spirit, USP.....		10
½-gr. hypo tabs, strychnine sulfate, USP.....		30
Vials, 6½-cc.....	Each.....	2
Case, pocket, veterinary, containing.....	do.....	1
Container, metal, containing.....	do.....	1
Knife, operating:		
1½-inch.....		1
2-inch.....		1
Bistoury:		
Probe-pointed, curved, 2-inch.....		1
Sharp-pointed, curved, 2-inch.....		1
Scissors, 1 point sharp, 5½-inch.....	Each.....	1
Curette, sharp.....	do.....	1
Forceps, hemostatic, pean, 5½-inch.....	do.....	2
Gouge, hoof.....	do.....	1
Probe, jointed, 10-inch.....	do.....	1
Needles, surgeon's, regular, assorted (2 each of sizes 1, 2, and 5).....	Pkg.....	1
Suture, silk, twisted, heavy.....	Card.....	1
Retainer.....	Set.....	1
Syringe, hypodermic, 6-cc.....	Each.....	1
Thermometer, clinical, veterinary.....	do.....	1
Iodine swab, 6.....	Box.....	1
Container, metal, No. 1.....	Each.....	1
Sterilizer, hypodermic, needle.....	do.....	1
Emergency veterinary tag.....	Book.....	1

b. Noncommissioned officers.—The kit, veterinary noncommissioned officer's, includes—

Article	Unit	Quantity
Kit:		
Cantle ring strap.....	Each.....	2
Pouch, canvas.....	do.....	2
Pouch, lace.....	do.....	1
Suspender.....	do.....	
<i>In right-hand pouch</i>		
Cresol saponated solution, USP.....	Cc.....	60
Bandage, muslin, 3-inch.....	Each.....	3
Stopper, rubber, solid, No. 2.....	do.....	1
Pencil.....	do.....	1
Iodine swab, 6.....	Box.....	1
Oakum, 2-oz.....	Pkg.....	1
Case, instrument, veterinary, NCO, containing.....	Each.....	1
Case, canvas, No. 3.....	do.....	1
Forceps, dressing, 5½-inch.....	do.....	1
Forceps, hemostatic, Kelly, straight.....	do.....	1
Knife, operating, 1½-inch.....	do.....	1
Needle, surgeon's, regular, ¾ circle, sizes 4 and 6.....	do.....	3
Scissors, double-blunt, 6½-inch.....	do.....	1
Knife, hoof searching.....	do.....	1
Retainer.....	Set.....	1
Suture, tape, linen.....	Rolls.....	2
Thermometer, veterinary.....	Each.....	1
Suture, silk braided, 3 sizes.....	Pkg.....	1
Container, metal, Nos. 1 and 4.....	Each.....	1
Vial, glass, 60-cc.....	do.....	1
Emergency veterinary tag.....	Book.....	1
<i>In left-hand pouch</i>		
Ammonia, aromatic spirit, USP.....	Cc.....	60
Fl Ex cannabis, USP.....	do.....	60
Cotton, absorbent, compressed.....	Ounces.....	2
Gauze, plain, sterilized.....	Pkgs.....	2
Stopper, rubber, solid, No. 2.....	Each.....	2
Pin, safety, large.....	Card.....	1
Bandage, triangular, compressed.....	Each.....	2
Oakum, 2-oz.....	Pkg.....	1
Container, metal, No. 4.....	Each.....	2
Vial, glass, 60-cc.....	do.....	2

c. *Privates*.—The kit, veterinary private's, includes—

Article	Unit	Quantity
Kit:		
Cattle ring strap.....	Each.....	2
Pouch, canvas.....	do.....	2
Pouch, lace.....	do.....	2
Suspender.....	do.....	1
<i>In right-hand pouch</i>		
Bandage, muslin, 3-inch.....	do.....	6
Cotton, absorbent, compressed.....	Ounce.....	1
Gauze, plain, sterilized.....	Pkg.....	1
Scissors, double-blunt, 6½-inch.....	Each.....	1
Pencil.....	do.....	1
Pin, safety, large.....	Card.....	1
Retainer.....	Set.....	1
Iodine swab, 6.....	Boxes.....	2
Oakum, 2-oz.....	Pkg.....	1
Case, instrument, veterinary private's, containing 1 forceps, dressing, and 1 forceps, hemostatic.	Each.....	1
Container, metal, No. 1.....	do.....	1
Emergency veterinary tag.....	Book.....	1
<i>In left-hand pouch</i>		
Bandage, triangular, compressed.....	Each.....	3
Dressing, first aid, small.....	Pkgs.....	8

APPENDIX IV

MEDICAL DEPARTMENT CHESTS

■ 1. GENERAL NATURE OF CONTENTS AND WEIGHTS.—A large part of the unit medical equipment of division medical units is packed in standard chests. With the exception of the pack equipment (chests designated by letters), and chest No. 6, each chest is (inside dimensions) 28 inches long, $16\frac{1}{4}$ inches wide, and $14\frac{1}{2}$ inches deep, and occupies approximately 5 cubic feet of space. The chests of the pack equipment are smaller and are designed to fit the Philips pack saddle. Chest No. 6 is shaped to accommodate the particular lighting unit supplied.

■ 2. LIST OF STANDARD CHESTS.

Chest No.	General nature of contents	Weight, with contents
		<i>Pounds</i>
1-----	Surgical dressings-----	121
2-----	Drugs and instruments-----	150
4-----	Office equipment-----	146
5-----	Sterilizer-----	110
6-----	Lighting unit-----	240
7-----	Clinical microscopy set-----	140
Medical pack:		
A-----	Drugs and surgical dressings-----	45
B-----	Instruments, etc-----	45
60-----	Dental dispensary-----	166
61-----	Dental field laboratory-----	160
62-----	Dental field laboratory-----	150
80-----	Veterinary drugs and instruments-----	150
81-----	Veterinary surgical dressings-----	110
Veterinary pack:		
A-----	Veterinary drugs and dressings-----	28
B-----	Lamps, rope, etc-----	28

■ 3. ITEMIZED LISTS OF CONTENTS.

a. Chest, Medical Department, No. 1.

Article	Unit	Quantity
Chest, field:		
Drawer.....	Each.....	2
Plain (equipped with bracket table board).....	do.....	1
Litter support bracket.....	do.....	2
Apron, rubberized.....	do.....	2
Basin, rubber.....	do.....	2
Book, blank, 8VO.....	do.....	1
Pencil.....	do.....	1
Pin, safety:		
Large.....	Cards.....	4
Medium.....	do.....	4
Dressing, first-aid, large.....	Each.....	50
Scissors, bandage, with chain.....	do.....	2
Book, note, manifolding:		
Binder.....	do.....	1
Filler.....	do.....	1
Bandage, muslin, 5-inch.....	Doz.....	2½
Cotton, absorbent, compressed.....	Ounces.....	25
Gauze, plain, sterilized.....	Pkgs.....	25
Plaster, adhesive:		
1-inch.....	Spools.....	6
3-inch.....	do.....	6
Iodine swab, 6.....	Boxes.....	12
Bandage:		
Gauze, compressed, 3-inch.....	Dozen.....	6
Triangular, compressed.....	Each.....	12
Dressing, first-aid, small.....	Pkgs.....	60

b. Chest, Medical Department, No. 2.

Article	Unit	Quantity
Chest, field, plain, with tray set and spacer bracket.....	Each.....	1
Ether (for anesthesia), USP.....	¼ lb.....	4
Ethyl chloride, USP.....	3 oz.....	1
Eugenol, USP.....	Ounce.....	1
Mercuric oxide, yellow, ointment, USP.....	¼ oz.....	4
Mercury bichloride, large poison tab, USP.....	250.....	1
Petrolatum, USP.....	Pounds.....	1
Plaster, adhesive, 3-inch.....	Spool.....	1
Cotton, absorbent, compressed.....	Ounces.....	25

b. Chest, Medical Department, No. 2—Continued.

Article	Unit	Quantity
Scissors, bandage.....	Each.....	1
Applicator, wood.....	Carton.....	1
Book, blank, 8VO.....	Each.....	1
Pencil.....	do.....	4
Box:		
Ointment, 3 in nest.....	Dozen.....	1
Tablet, folding.....	do.....	6
Pin, safety:		
Large.....	Cards.....	2
Medium.....	do.....	2
Acid, boric, ointment, 1-oz., USP.....	Tubes.....	6
Iodine, 15-gr., and potassium iodide, 22.5-gr., USP.....	do.....	6
Mercurial ointment, mild, ½-oz., USP.....	do.....	12
Zinc oxide ointment, 1-oz., USP.....	do.....	12
Bandage, gauze, compressed, 3-inch.....	Each.....	12
Container, hard rubber, No. 2, containing: Protein, silver, mild, USP 4½ gr. tab.....	do.....	1
Container, metal, No. 7, containing.....	Each.....	6
Acid:		
Acetylsalicylic.....	Tab.....	500
Tannic, USP.....	Pound.....	¼
Ammonium chloride.....	Troches.....	250
Quinine sulphate.....	Tab.....	500
Sodium bicarbonate and peppermint.....	do.....	1,000
Bismuth subcarbonate.....	do.....	1,000
Container, metal, No. 9, containing.....	do.....	7
Aloin compound.....	Pills.....	250
Cascara sagrada, extract.....	Tab.....	250
Codeine sulphate, ½-gr.....	do.....	500
Coryza.....	do.....	500
Ipecac and opium powder, 5-gr.....	do.....	200
Phenobarbital, ½-gr.....	do.....	500
Potassium permanganate, 5-gr.....	do.....	300
Container, metal, No. 12, containing 1 pint, glycerin, USP.....	Each.....	1
Graduate, 60-cc.....	do.....	2
Emergency medical tag.....	Book.....	1
Razor, safety.....	Each.....	1
Blades.....	Pkg.....	1
Dropper, medicine.....	Dozen.....	1
Acid salicylic, ointment, 1-oz.....	Tubes.....	12
Mercuric ointment, ammoniated, 1-oz., USP.....	do.....	12
Sulfur ointment, 1-oz., USP.....	do.....	12
Tourniquet, field.....	Each.....	4
Hone, oil, 3½-inch.....	do.....	1
Tray, instrument, 10-inch.....	do.....	1

b. Chest, Medical Department, No. 2—Continued.

Article	Unit	Quantity
Syringe, urethral, prophylaxis.....	Each.....	1
Soap, white, floating.....	Bars.....	2
Paper, toilet.....	Roll.....	1
Mercurous chloride ointment, 1-oz.....	Tubes.....	12
Container, hard-rubber, No. 2, containing protein, silver, strong, USP, 4 $\frac{1}{10}$ -gr. tab.	Each.....	1
Cup, paper, noncollapsible.....	do.....	40
Venereal prophylaxis slip.....	do.....	100
Box, cash, containing.....	do.....	1
Apomorphine hydrochloride, $\frac{1}{10}$ gr.....	Tabs.....	20
Atropine sulphate, $\frac{1}{100}$ -gr.....	do.....	20
Digitalis hypo solution.....	Amps.....	12
Epinephrine hydrochloride, $\frac{3}{200}$ -gr.....	Tabs.....	60
Morphine sulphate, $\frac{1}{4}$ -gr.....	do.....	400
Procaine hydrochloride and epinephrine.....	do.....	100
Suture, cat-gut:		
Chromic, size 2.....	Tubes.....	12
Plain, size 1.....	do.....	12
Plain, size 2.....	do.....	12
Syringe, Luer:		
2-cc.....	Each.....	3
10-cc.....	do.....	1
Needle:		
25-gage, $\frac{1}{4}$ -inch canula.....	do.....	4
23-gage, $\frac{3}{4}$ -inch canula.....	do.....	4
19-gage, $1\frac{1}{4}$ -inch canula.....	do.....	2
17-gage, 2-inch canula.....	do.....	2
15-gage, 2-inch canula.....	do.....	2
Spoon, tea.....	do.....	2
Thermometer, clinical.....	do.....	6
Corkscrew, folding.....	do.....	1
Sterilizer, hypodermic needle.....	do.....	1
Foot powder.....	$\frac{1}{4}$ lb.....	4
Magnesium sulphate.....	4 lbs.....	2
Gloves, medium:		
Size 7 $\frac{1}{2}$	Pairs.....	2
Size 8 $\frac{1}{2}$	do.....	2
Inhaler, Xankauer.....	Each.....	1
Towel, hand.....	do.....	6
Brush, hand.....	do.....	2
Apron, rubberized.....	do.....	1
Bag, hot water and syringe.....	do.....	1
Basin, pus.....	do.....	1
Battery, dry cell.....	do.....	2
Flashlight.....	do.....	1

b. Chest, Medical Department, No. 2—Continued.

Article	Unit	Quantity
Flashlight lamp.....	Each.....	2
Case, operating, small.....	do.....	1
Basin, rubber.....	do.....	2
Container, metal, No. 5, containing.....	do.....	1
Catheter, urethral, rubber:		
14 F.....	do.....	2
16 F.....	do.....	2
18 F.....	do.....	2
22 F.....	do.....	2
Container, metal, No. 14, each containing 1 qt. alcohol, USP.....	do.....	2
Cup, enamelware.....	do.....	3
Dispensing set, field.....	do.....	1
Gloves, rubber, pouch.....	do.....	1
Sterilizer, instrument 9¾-inch, containing.....	do.....	1
Stethoscope.....	do.....	1
Tubing, stomach.....	do.....	1

c. Chest, Medical Department, No. 4.

Article	Unit	Quantity
Chest, field, plain equipped with tray set, type 3.....	Each.....	1
Book, blank, 8VO.....	do.....	1
Clip, paper, Gem No. 1.....	Box.....	1
Envelope:		
No. 189.....	Pkgs.....	6
No. 36.....	do.....	1
No. 84.....	do.....	1
Eraser:		
Soft rubber.....	Each.....	1
Rubber, typewriter.....	do.....	2
Mucilage, 4-oz.....	Bottle.....	1
Pad:		
Prescription.....	Each.....	1
Memorandum, 6 by 9 inches.....	do.....	4
Memorandum, 8 by 10½ inches.....	do.....	2
Paper:		
Blotting, 3 by 9½ inches.....	do.....	4
Carbon, black, 8 by 10½ inches.....	Box.....	1
Typewriter, bond, 8 by 10½ inches.....	Ream.....	1
Typewriter, manifold, 8 by 10½ inches.....	do.....	2

c. Chest, Medical Department, No. 4—Continued.

Article	Unit	Quantity
Pencil.....	Dozen.....	2
Blue.....	Each.....	1
Indelible.....	do.....	2
Red.....	do.....	1
Penholder.....	do.....	4
Ribbon, typewriter.....	do.....	1
Ruler, 12-inch.....	do.....	1
Tack, thumb.....	do.....	24
Tag, shipping, linen.....	do.....	50
Pin, common.....	Paper.....	1
Bands, rubber, assorted.....	Carton.....	1
Book, note, manifoldng:		
Binder.....	Each.....	2
Filler.....	do.....	4
Ink:		
Bottle, hard rubber.....	do.....	1
Powder, black.....	Tube.....	1
Pens, steel, assorted.....	Doz.....	1
Typewriter, portable.....	Each.....	1

d. Chest, Medical Department, No. 5.

Article	Unit	Quantity
Chest, field, plain, equipped with tray, No. 7, for sterilizer.....	Each.....	1
Gauze, plain, 5 yards.....	Rolls.....	50
Sterilizer, drum, 9-inch.....	Each.....	2
Autoclave, laboratory, field.....	do.....	1

e. Chest, Medical Department, No. 6.

Article	Unit	Quantity
Chest, field, No. 6.....	Each.....	1
Motor generator, gasoline operated, of about 400 watts output, with insulated wire, light fixtures, and electric lamps.....	do.....	1

f. Chest, Medical Department, No. 7.

Article	Unit	Quantity
Chest, field, plain, 4-drawer.....	Each.....	1
Cedarwood oil, immersion, 1-oz. USP reagent.....	Bot.....	1
Litmus paper:		
Blue, 100 strips USP reagent.....	Vial.....	3
Red, 100 strips USP reagent.....	do.....	2
Depressor, tongue, Bosworth.....	Each.....	1
Forceps, dressing 5½-inch, spring.....	do.....	1
Depressor, tongue, wood 96.....	Ctn.....	1
Syringe, Luer:		
10 ml. graduated to ¼-ml.....	Each.....	1
Needle, 21-gage canula 1¼-inch.....	do.....	12
Blood lancet, automatic.....	do.....	1
Bottle:		
Dropping 30 ml.....	do.....	6
N. M. 60 ml.—w/ground glass stopper and metal screw cap-diameter 33 mm length, including cap, 115 mm.....	do.....	4
Bush test tube, length 9-inch, bristles-part 3 by 1½ inch.....	do.....	3
Case canvas for pipettes containing—		
Holder, needle, Kolle form to take wire 20 to 26 gage.....	do.....	1
Pipette, serological:		
1 ml.....	do.....	1
10 ml.....	do.....	4
Red glass, 6 mm.....	do.....	4
Tubing, glass, 6 mm outside diameter soft with stout walls.....	Pieces.....	4
Wire platinum No. 24 B&S gage, weight approximately 1.33 gms. per ft.....	Inches.....	4
Cover glass 22 m square No. 1, glass ½-oz.....	Boxes.....	4
Cylinder 25-ml. graduated with zero at bottom w/spout delivering.....	Each.....	2
Hemacytometer, complete, counting chamber pipette for both red and white corpuscles and 2 cover slips in case.....	do.....	1
Hemaglobinometer Tallquist, 50-sheet book.....	Book.....	1
Paper lens Japanese 3½-inch square, 100 sheets.....	Pkg.....	1
Slide micre 75 by 25 mm ½ gro.....	Ctn.....	2
Urinometer, Squibb, w/cylinder.....	Each.....	1
Lamp, alcohol:		
SSW-1 w/flare shield.....	do.....	1
SSW-1 wick.....	do.....	3
Pencil, blue, wood.....	do.....	1
File, 5-inch, triangular tapered without handle.....	do.....	2
Pliers, combination 5-inch.....	do.....	1
Test tube block stand.....	do.....	1
Benedict's solution test.....	Tablet.....	72
Romanowski stain, Wrights, modification.....	Vial.....	5
Bismarck brown.....	do.....	2

f. Chest, Medical Department, No. 7—Continued.

Article	Unit	Quantity
Methylene blue.....	Vial.....	2
Fuchsin, basic.....	do.....	2
Gram iodide solution.....	do.....	2
Bandage, 3-inch, 3-inch by 10 yds. gauze, compressed.....	Doz.....	5
Cotton absorbent, 1-oz., compressed, sterilized.....	Oz.....	10
Gauze, plain, sterilized, 2 half-yd. lengths, 1 yd. wide, compressed.	Pkg.....	12
Applicator, wood, 6 gross.....	Ctn.....	1
Spoon metal for typhoid carrier examination 2 by $\frac{1}{8}$ inch pointed to fit 44710-1000.	do.....	1
Vial, 2 dram, shell, 75 by 15 mm. w/o cork 4, for typhoid carrier examination.	Each.....	12
Microscope, field folding, complete.....	do.....	1
Microscope, dark field apparatus:		
Electric, complete, consisting of dark field condensor, two 4-volt 2 C. P. lamps, cord and plug in wooden case.	do.....	1
6-volt lamp 2 C. P. required when 43180 is used with resistance.	do.....	2
Resistance for.....	do.....	1
Paper filter, 100-mm.....	Pkg.....	2
Funnel, glass, 2-inch.....	Each.....	2
Test glass, urinalysis, ungraduated, 200 ml., conical for on foot w/spout.	do.....	2
Test tube, chemical 150 by 16 mm thin wall with lip for urinalysis etc. Takes cork 6 or rubber stopper 1.	do.....	30
Loefflers blood serum.....	Tube.....	20
Alcohol:		
Ethyl, USP, 1-pt.....	Tin.....	2
Ethyl denatured, 1-qt.....	do.....	4
Methyl 1-pt. S.M. acetone, free.....	do.....	1
Can copper w/screw top, 1-qt.....	Can.....	8
Can copper w/screw top, 1-pt.....	do.....	6
Water distilled, 1-qt.....	Tin.....	4

g. Chest, medical pack, A.

Article	Unit	Quantity
Ether (for anesthesia).....	$\frac{1}{4}$ -lb.....	6
Ethyl chloride, USP.....	3-oz.....	1
Foot powder.....	$\frac{1}{4}$ -lb.....	3
Procaine hydrochloride and epinephrine hypo tab, USP.....	20.....	10
Bandage, muslin, 5-inch.....	Each.....	50

g. Chest, medical pack, A—Continued.

Article	Unit	Quantity
Cotton, absorbent, compressed.....	Ounces.....	24
Gauze, plain, sterilized.....		20
Plaster, adhesive:		
1-inch.....	Spools.....	10
3-inch.....	do.....	12
Applicator, nasal, steel.....	Each.....	3
Scissors, bandage.....	do.....	6
Clipper, hair.....	do.....	1
Syringe, Luer:		
10-cc.....	do.....	2
Needle, 19-gage, 1¾-inch canula.....	do.....	24
Pencil.....	do.....	4
Pin, safety:		
Large.....	Cards.....	7
Medium.....	do.....	7
Iodine swab, 6.....	Boxes.....	24
Bandage, gauze, compressed, 3-inch.....	Box.....	1
Dressing, first aid, small.....	Pkgs.....	100
Tourniquet, field.....	Each.....	3
Hone, oil, 3½-inch.....	do.....	1
Venereal prophylaxis slip (Form 77).....	do.....	100

h. Chest, medical pack, B.

Article	Unit	Quantity
Packet, front-line:		
No. 1.....	Each.....	40
No. 2.....	do.....	40
No. 3.....	do.....	8
Bag, hot water.....	do.....	6
Bandage, triangular, compressed.....	do.....	24

i. Chest, Medical Department, No. 60.

Article	Unit	Quantity
Chest, field, plain, equipped with tray set.....	Each.....	1
Alcohol, denatured.....	Qt.....	1
Creosote, USP.....	Ounce.....	1
Eugenol, USP.....	do.....	1

i. Chest, Medical Department, No. 60—Continued.

Article	Unit	Quantity
Mercury, USP.....	¼ lb.....	1
Oil, theobroma sticks.....	¼ lb.....	1
Procaine hydrochloride, ¼-gr. hypo tab.....	20.....	1
Procaine hydrochloride and epinephrine hypo tab.....	20.....	3
Pumice, fine powder.....	Lb.....	1
Ringer solution tab.....	100.....	1
Silver nitrate and formalin.....	Box.....	1
Cotton, absorbent, compressed.....	Oz.....	2
Elevator, nasal, blunt.....	Each.....	1
Forceps, hemostatic:		
Halstead, mosquito, straight.....	do.....	1
Kelly, straight.....	do.....	1
Kelly, Péan, curved.....	do.....	1
Needle:		
Surgeon's, regular, ¾ circle, sizes 12, 16, and 20.....	do.....	2
Uterine, size 5, half-circle.....	do.....	2
Scissors, iris, full-curved.....	do.....	1
Suture, catgut:		
Chromic, sizes 1, 2, and 3.....	Tubes.....	2
Plain, sizes 1, 2, and 3.....	do.....	2
Syringe, tonsil, laryngeal, and dental, 3-cc.....	Each.....	1
Alloy, 1-oz.....	Bottles.....	2
Blower, chip.....	Each.....	1
Bur, angle, handpiece, Nos. 2, 4, 6, 8, 9, 34, 35, 37, 39, 557, 558, 559, 560, and 568.....	Pkg.....	1
Bur, straight handpiece, Nos. 2, 4, 6, 8, 9, 34, 35, 37, 39, 200, 202, 221, 557, 558, 559, 560, and 568.....	do.....	1
Burnisher:		
Nos. 29, 32, and 34S.....	Each.....	1
Tantalum.....	do.....	1
Cement:		
Germicidal.....	Box.....	1
Permanent pearl gray.....	do.....	1
Silicate: case.....	Each.....	1
Liquid, caulk.....	Bottles.....	2
Shades 1, 2, 4, 5, 6, 8, 10, 11, 13, and 14.....	do.....	1
Shades 3, 7, and 9.....	do.....	2
Chisel:		
Nos. 5 and 48.....	Each.....	1
Wedelstaedt, Nos. 41 and 42.....	do.....	1
Clamp, Nos. 19, 20, 21, 22A, and 23A.....	do.....	1
Cleaners, Nos. 0, 2, and 3.....	Pkgs.....	6
Curette, Nos. 3, 24, and 25.....	Each.....	1
Disk, paper.....	Box.....	1

i. Chest, Medical Department, No. 60—Continued.

Article	Unit	Quantity
Dissolver:		
3-cc.....	Each.....	1
3-cc. cup.....	do.....	2
Drill, No. 100, straight.....	Pkg.....	1
Elevator, Winter, Nos. 122, 123, and 137.....	Each.....	1
Engine:		
Oil.....	Bottle.....	1
Foot.....	Each.....	1
Handpiece:		
Angle.....	do.....	1
Straight.....	do.....	1
Excavator, Nos. 34, 49, 50, 57, 58, 63, 64, 77, 78, 79, 80, and 81.....	do.....	1
Explorer, Nos. 5, 6, and 23.....	do.....	1
Floss, 100 yards.....	Spool.....	1
Forceps:		
Rubber dam:		
Clamp.....	Each.....	1
Punch.....	do.....	1
Nos. 15, 18R, 18L, 65, 103, 150, 151, 210, 215, and 217.....	do.....	1
Gutta-percha:		
High heat, ½-oz.....	Box.....	1
Temporary, 1-oz.....	do.....	2
Holder:		
Cotton.....	Each.....	1
Mercury.....	do.....	1
Napkin.....	do.....	1
Nerve broach.....	do.....	1
Rubber dam.....	do.....	2
Lamp, alcohol, SSW-1.....	do.....	1
Wick.....	do.....	2
Lancet, exact, No. 1.....	do.....	1
Mallet, plugging.....	do.....	1
Mandrel:		
No. 303, for angle handpiece.....	do.....	6
No. 303, for straight handpiece.....	do.....	6
Morgan-Maxfield, for straight handpiece.....	do.....	2
Mechanical dam.....	do.....	1
Mirror, mouth.....	do.....	1
Pliers:		
No. 2, dressing.....	do.....	1
No. 122, smooth, beak, office.....	do.....	1
Plugger:		
Ladmore, No. 3.....	do.....	1
Root canal, Nos. 7 and 9.....	do.....	1
Woodson, Nos. 2 and 3.....	do.....	1

i. Chest, Medical Department, No. 60—Continued.

Article	Unit	Quantity
Point, straight handpiece, Nos. 183, 186, 226, and 234.....	Each.....	6
Point, root canal, Nos. 6, 8, and 10.....	Box.....	1
Polisher, rubber cup.....	do.....	3
Pot, white.....	Each.....	2
Probe.....	do.....	1
Reamer, B-13.....	Pkgs.....	2
Retainer, matrix:		
No. 1.....	Each.....	1
Bicuspid band, medium.....	Pkg.....	1
Molar band, medium.....	do.....	1
Rubber dam.....	Roll.....	1
Weight.....	Each.....	2
Sandarac, varnish, 2-oz.....	Bottle.....	1
Saw, ribbon.....	Each.....	3
Scaler:		
Nos. 33 and 34.....	do.....	1
Pyorrhea, Towner, Nos. 01-5, 02-6, and 04-8.....	do.....	1
Separator, Elliott.....	do.....	1
Slab, caulk-6.....	do.....	1
Spatula:		
Cement.....	do.....	1
Stellite.....	do.....	1
Bundle, stick.....	do.....	1
Strip:		
Celluloid.....	Box.....	1
Polishing:		
Coarse.....	do.....	1
Fine.....	do.....	1
Medium.....	do.....	1
Syringe:		
Dental, needle for, platino-iridium, 1-inch and 1½-inch canula.....	Each.....	2
Water.....	do.....	1
Teeth, shade guide.....	do.....	1
Wheel, Nos. 301, 302, 304, and 305.....	do.....	1
Wire, bronze, ligature.....	Box.....	1
Towel, hand.....	Each.....	24
Brush, hand.....	do.....	1
Soap, white, floating.....	Bar.....	1
Book, blank, 8VO.....	Each.....	1
Envelope No. 189.....	Pkg.....	1
Paper, typewriter, bond, 8 by 10½ inches.....	Sheets.....	50
Pencil.....	Each.....	1
Thermometer, clinical.....	do.....	1
Suture, silk, braided, 3 sizes.....	Pkg.....	1

i. Chest, Medical Department, No. 60—Continued.

Article	Unit	Quantity
Rubber, red.....	Sheets.....	2
Basin, rubber.....	Each.....	1
Cup, enamelware.....	do.....	2
Hone, oil, 3½-inch.....	do.....	1
Mortar and pestle, 7-cm.....	do.....	1
Sterilizer, hypodermic needle.....	do.....	1
Sterilizer, instrument, 9¾-inch.....	do.....	1
Vial, glass stoppered.....	do.....	6
Report of Dental Service (Form 57).....	do.....	25
Register of Dental Patients (card) (Form 79).....	do.....	250

j. Chest, Medical Department, No. 61.

Article	Unit	Quantity
Acid, hydrochloric.....	Pound.....	1
Asbestos, fiber.....	do.....	¼
Pumice, fine powder, 1-lb.....	Ctn.....	1
Sodium, borate, 1-lb.....	do.....	1
Base plate, 12 in box.....	Box.....	1
Blow pipe, mouth.....	Each.....	1
Brush, camel's hair, small.....	do.....	2
Bur, vulcanite, No. 3.....	do.....	2
Charcoal blocks; 3 by 5 inches.....	do.....	1
Composition cake, ½ lb. modeling.....	Boxes.....	2
Cone, felt:		
No. 3.....	Each.....	1
No. 6.....	do.....	1
Dentimeter, iron wire, ⅛ oz.....	Spool.....	1
Flux, oxidizing.....	Bottle.....	1
Machine, casting:		
Crucible.....	Each.....	3
Inlay, flask, 1¼-in.....	do.....	2
Saddle and bridge, flask.....	do.....	1
Mandrel, No. 303, for straight h.p.....	do.....	3
Moldine, ½-lb.....	Tin.....	1
Paper, articulating.....	Book.....	1
Pliers:		
No. 136, contouring.....	Each.....	1
No. 137, contouring.....	do.....	1
Repair outfit.....	do.....	1

j. Chest, Medical Department, No. 61—Continued.

Article	Unit	Quantity
Rubber:		
Gold base, ½-lb.....	Box.....	1
Light red, ½-lb.....	do.....	2
Nature gum, ½-lb.....	do.....	1
Shears, crown, straight.....	Each.....	1
Shellac, 2-oz.....	Ctn.....	1
Vulcanizer, thermometer.....	Each.....	1
Wax, base plate, ½-lb.....	Boxes.....	3
Wheel:		
No. 301.....	Each.....	3
No. 302.....	do.....	3
No. 304.....	do.....	3
No. 305.....	do.....	3
No. 307.....	do.....	3
No. 310.....	do.....	3
1-inch, coarse.....	do.....	1
2-inch, coarse.....	do.....	2
2-inch, medium.....	do.....	2
Cloth buffing, 3-inch.....	do.....	1
Felt, No. 2.....	do.....	1
Felt, No. 3.....	do.....	1
Chalk, 1-lb. prepared, U. S. P.....	Ctn.....	1
Arbor, emery.....	Each.....	1
Articulator, crown and bridge SSW-5.....	do.....	2
Bowl, 4¾ in.....	do.....	1
Dentimeter.....	do.....	1
File:		
Gold, half round.....	do.....	1
Vulcanite, double end.....	do.....	1
Finisher, No. 2.....	do.....	1
Knife:		
Office, SSW-5.....	do.....	1
Plaster, SSW-10.....	do.....	1
Pliers:		
No. 107, round nose.....	do.....	1
No. 122, smooth beak, office.....	do.....	1
Clasp bending SSW-134.....	do.....	1
Saw, frame.....	do.....	1
Flat blade.....	Bundle.....	1
Spatula:		
Plaster.....	Each.....	1
Wax, SSW-7.....	do.....	2
Wax, SSW-31.....	do.....	2
Tongs, soldering, SSW-4.....	do.....	1

j. Chest, Medical Department, No. 61—Continued.

Article	Unit	Quantity
Tray:		
Crown and bridge.....	do.....	1
Lower, BIS-18.....	do.....	1
BIS-22.....	do.....	1
BIS-24.....	do.....	1
BIS-26.....	do.....	1
SSW-1.....	do.....	1
SSW-3.....	do.....	1
SSW-5.....	do.....	1
Metal, ½-lb.....	Roll.....	1
Split hinge, Smedley.....	Set.....	1
Upper:		
SSW-1.....	Each.....	1
SSW-3.....	do.....	1
SSW-5.....	do.....	1
Trimmer:		
No. 26.....	do.....	1
No. 27.....	do.....	1
Tweezers:		
B.....	do.....	1
L.....	do.....	1
Wax:		
Crown.....	Box.....	1
Inlay.....	do.....	1
Towels, hand.....	Each.....	24
Pliers, side cutting, 6-inch.....	do.....	1
Investment, compound:		
Crown and bridge, 4-lb.....	Tin.....	1
Inlay, 4-lb.....	do.....	1
Plaster of Paris, modeling, 4 lbs. each.....	do.....	2
Pliers, laboratory.....	Each.....	1
Tongs, flask.....	do.....	1
Standard set of chucks.....	Set.....	1
Hammer.....	Each.....	1
Tripod, iron, 6-inch, knocked down.....	do.....	1
Articulator, Gysi.....	do.....	1
Frame, heating.....	do.....	
Gold:		
Casting, inlay, 2 dwt.....	Ingot (*).....	
Lingual bar, long, 2 dwt.....	Each (*).....	
Plate:		
22k. 5 dwt.....	Piece(*).....	
24k. 3 dwt.....	do.....	

* As required.

j. Chest, Medical Department, No. 61—Continued.

Article	Unit	Quantity
Gold—Continued.		
Solder:		
16k.....	Dwt. (*)	
18k.....	do	
20k.....	do	
Wire, 16 G. round.....	do	
Lamp, alcohol, large, modified, M.F.S.S.	Each	1
Machine, casting, perfection (7).....	do	1
Pan, pickling.....	do	1
Vise, bench.....	do	1
Vulcanizer:		
Compressor, clamps.....	do	1
Flask, Tench-Dunham, 22-C.....	do	1
Pencil, indelible.....	do	1
Tool, universal.....	do	1
Pliers, adjustable, automobile, 6-inch.....	do	1

k. Chest, Medical Department, No. 62.

Article	Unit	Quantity
Articulator (gysi-simplex).....	Each	1
Generator, gasoline.....	do	1
Press.....	do	1
Vulcanizer, kerosene, complete.....	do	1
Gowns, operating.....	do	2
Towels, hand.....	do	12
Lathe, hand, M. F. S. S.....	do	1
Bellows, foot power, 11-inch.....	do	1
Arbor, emery, bands, 100 in box.....	Box	1
Plaster of Paris, impression, 4 lbs.....	Tin	1
Stone, artificial, 4 lbs.....	do	2
Crowns, facings, and teeth, prosthetic assortment No. 132, M. F. S. S.	Set	1
Alcohol, ethyl, denatured, 1 pt.....	Tins	6

* As required.

1. *Chest, Medical Department, No. 80.*—150 pounds, 5 cubic feet.

Article	Unit	Quantity
Chest, field plain, equipped with tray, No. 6 plain	Each	1
Acid, boric, USP	Pound	1
Aloin compound, capsule	Dozen	2
Ammonia, aromatic spirit, USP	Pint	1
Ammonium carbonate, USP	Pounds	6
Chloral hydrate, USP	¼-lb	1
Petrolatum, USP	Pounds	2
Soap, soft	do	2
Cotton, absorbent, compressed	Ounces	15
Gauze, plain sterilized	Pkgs	15
Stopper, rubber, solid, No. 2	Each	4
Towel, hand	do	6
Soap, white, floating	Bars	6
Apron, rubberized	Each	1
Matches, safety	Boxes	4
Pin, safety, medium	Cards	2
Spatula, 6-inch	Each	1
Tool, universal	do	1
Case, hypodermic tablets, veterinary (for detailed contents see contents of kit, vet., V. O.)	do	2
Case, mallein test	do	1
Catheter, horse:		
Stylet	do	1
Float, dental:		
Angular	do	1
File blade	do	2
Handle	do	1
Rasp blade	do	2
Straight	do	1
Gun, balling	do	1
Oakum	Pounds	2
Pump, combination	Each	1
Suture, tape, linen	Rolls	2
Syringe:		
Dose, metal, 2 ounces	Each	1
Hypodermic, 6 cc	do	1
Thermometer, clinical, veterinary	do	6
Tube:		
Stomach, horse	do	1
Stylet	do	1
Tracheal, self-retaining	do	1
Cresol, saponated solution, USP, 1-gallon	Tins	2
Iodine, 15-gr., and potassium iodide 22.5-gr	Tubes	100
Lead acetate, compound tab. 10	do	20

l. Chest, Medical Department, No. 80.—150 pounds, 5 cubic feet.—Continued.

Article	Unit	Quantity
Tar, pine, commercial, 1-pt.....	Tins.....	2
Suture, silk braided, 3 sizes.....	Pkg.....	1
Container, metal:		
No. 4 (for glass vials).....	Each.....	4
No. 7, containing 500 mercury bichloride, large poison tab.....	do.....	1
No. 14, containing.....	do.....	3
Alcohol:		
USP.....	Qt.....	1
Denatured.....	do.....	2
Graduate, 60-cc.....	Each.....	1
Pill tile, 5-inch, bakelite.....	do.....	1
Vial, glass, 60-cc.....	do.....	4

m. Chest, Medical Department, No. 81.—110 pounds, 5 cubic feet.

Article	Unit	Quantity
Chest, field, plain, equipped with tray No. 6, plain.....	Each.....	1
Bandage:		
Canton flannel:		
3-inch.....	Dozen.....	3
5-inch.....	do.....	2
Muslin:		
3-inch.....	do.....	4
5-inch.....	do.....	4
Cotton, absorbent:		
Compressed.....	Ounces.....	85
Roll.....	Pound.....	1
Gauze, plain, sterilized.....	Pkgs.....	34
Brush, scrub.....	Each.....	4
Twine, jute, coarse.....	Balls.....	5
Battery, dry cell.....	Each.....	2
Flashlight.....	do.....	1
Lamp.....	do.....	2
Kit, horseshoer's (Q M) containing.....	do.....	1
Cutter, clinch, 6-inch (buffer).....	do.....	1
Hammer, shoeing, 10-ounce.....	do.....	1
Knife, shoeing.....	do.....	1
Nippers, cutting, 14-inch.....	do.....	1
Pincers, shoeing, 14-inch.....	do.....	1
Rasp, shoeing, 16-inch.....	do.....	1
Nails, horseshoe.....	Pounds.....	2

n. Chest, veterinary pack, A.

Article	Unit	Quantity
Acid, boric, USP.....	Pound.....	1
Alcohol, USP.....	Quart.....	1
Aloin compound capsule.....	Dozen.....	2
Ammonium carbonate, USP.....	Pound.....	1
Chloral, hydrate, USP.....	¼-lb.....	1
Cresol, saponated solution, USP.....	Quart.....	1
Petrolatum, USP.....	Pound.....	1
Bandage, muslin, 3-inch.....	Each.....	100
Cotton, absorbent, compressed.....	Ounces.....	32
Gauze, plain, sterilized.....	Pkgs.....	12
Suture, silk braided, coarse.....	Spool.....	1
Stopper, rubber, solid, No. 2.....	Each.....	1
Towel, hand.....	do.....	2
Soap, white, floating.....	Bars.....	3
Oakum.....	Pound.....	1
Thermometer, clinical, veterinary.....	Each.....	2
Iodine, 15-gr., and potassium iodide, 22.5 gr., USP.....	Tubes.....	50
Lead acetate compound tab. 10.....	do.....	5
Container, metal, No. 4.....	Each.....	1
Tray, instrument, 14½-inch.....	do.....	1
Vial, glass, 60-cc.....	do.....	1

o. Chest, veterinary pack, B.

Article	Unit	Quantity
Brush, scrub.....	Each.....	2
Battery, dry cell.....	do.....	2
Flashlight.....	do.....	2
Flashlight lamp.....	do.....	2
Matches, safety.....	Boxes.....	4
Tool, universal.....	Each.....	1
Container, metal, No. 11; for kerosene.....	do.....	1
Lantern.....	do.....	2
Lantern globe, white.....	do.....	2
Lantern wick.....	do.....	4
Nails, horseshoe (QM).....	Pound.....	1
Hood.....	Each.....	1
Rope, manila, ¼-inch (QM).....	Feet.....	100
Shoes, horse and mule (QM).....	Pounds.....	15

APPENDIX V

UNIT EQUIPMENT OF MEDICAL DETACHMENTS

■ 1. HEADQUARTERS AND HEADQUARTERS SECTION.

Article	Unit	Quantity
Chest, Medical Department:		
No. 1.....	Each.....	1
No. 2.....	do.....	1
No. 4.....	do.....	1
Water sterilizing set.....	do.....	1
Lantern set.....	do.....	1
Splint set.....	do.....	1
Cocoa unit.....	do.....	1
Tent, pyramidal, large, complete with fly, poles, and pins.....	do.....	1
Tent pins.....	Case.....	1
Blanket set.....	Each.....	1
Litters:		
Aluminum poles.....	do.....	6
Wood poles.....	do.....	6
Ax, with helve.....	do.....	1
Pick, with helve.....	do.....	1
Shovel, with D-handle.....	do.....	1
Buckets, GI, 14-quart.....	do.....	3
Flag, Geneva Convention.....	do.....	1
Rope, ½-inch, 40 feet.....	do.....	1

■ 2. BATTALION SECTIONS.—*a. For all battalion sections except those of separate battalions, squadron sections of horse cavalry regiments, and battalion sections of pack artillery regiments.*

Article	Unit	Quantity
Chest, Medical Department:		
No. 1.....	Each.....	2
No. 2.....	do.....	1
Water sterilizing set.....	do.....	1
Lantern sets.....	do.....	2
Splint sets.....	do.....	2
Cocoa units.....	do.....	2
Tent, small wall, complete with fly, poles, and pins.....	do.....	1
Tent pins.....	Case.....	1

For all battalion sections except those of separate battalions, squadron sections of horse cavalry regiments, and battalion sections of pack artillery regiments.—Continued.

Article	Unit	Quantity
Blanket sets.....	Each.....	2
Litters:		
Aluminum poles.....	do.....	12
Wood poles.....	do.....	12
Axes, with helves.....	do.....	2
Pickes, with helves.....	do.....	2
Shovels, with D-handles.....	do.....	2
Buckets, canvas, 18-quart.....	do.....	2
Flags, Geneva Convention.....	do.....	2
Ropes, ½-inch, 40 feet.....	do.....	2

b. For detachments of all separate battalions and comparable units.—Same as for headquarters and headquarters section. (See par. 1, app. III.)

c. For squadron sections of horse cavalry regiments and battalion sections of pack artillery regiments.

Article	Unit	Quantity
Chest, medical pack:		
A.....	Each.....	1
B.....	do.....	1

■ **3. DENTAL DISPENSARY.**—For each dental officer assigned: 1 each, chest, Medical Department, No. 60.

■ **VETERINARY SECTIONS.**—*a. For sections having more than one veterinary officer assigned.*

Article	Unit	Quantity
Chest, Medical Department		
No. 80.....	Each.....	2
No. 81.....	do.....	2
Field desk.....	do.....	1
Ax, with helve.....	do.....	1

a. For sections having more than one veterinary officer assigned.—Continued.

Article	Unit	Quantity
Pickax, with helve.....	Each.....	1
Shovel, short-handled.....	do.....	1
Buckets, GI.....	do.....	6
Fly, wall-tent, large, complete with poles and pins.....	do.....	1
Fork, stable.....	do.....	1
Marker, Green Cross, with staff.....	do.....	1
Picket pins.....	do.....	2
Rope, 1-inch, 50 feet.....	do.....	1

b. For sections having only one veterinary officer assigned.

Article	Unit	Quantity
Chest, Medical Department:		
No. 80.....	Each.....	1
No. 81.....	do.....	1
Lantern set.....	do.....	1
Field desk.....	do.....	1
Ax, with helve.....	do.....	1
Pickax, with helve.....	do.....	1
Shovel, short-handled.....	do.....	1
Buckets, GI.....	do.....	3
Fly, wall tent large, complete with poles and pins.....	do.....	1
Fork, stable.....	do.....	1
Marker, Green Cross, with staff.....	do.....	1
Picket pins.....	do.....	2
Rope, 1-inch, 50 feet.....	do.....	1

c. Veterinary pack equipment.—For each squadron of horse cavalry and each battalion of pack artillery.

Article	Unit	Quantity
Chest, veterinary pack:		
A.....	Each.....	1
B.....	do.....	1

APPENDIX VI

COMBAT ORDERS FOR MEDICAL UNITS

■ 1. WRITTEN FIELD ORDER.—*a. Situation.*—War between Blue and Red has been going on for some time. The Blue 1st Division has been engaged with Red forces on previous occasions, and Red organization, armament, and other military characteristics are well known to this division.

A Red force has been concentrating in the vicinity of Harrisburg, Pa. The Blue 1st Division marched north from Baltimore, Md., May 13, 1940.

Normal march dispositions were made of the 1st Medical Regiment during this march, and standing operating procedures have been established for medical service in normal situations. At 4:00 AM, May 15, the division field order for the occupation of a defensive position was issued.

b. The order.

FIELD ORDERS	}	1st Medical Regiment,
No. 45		WOODENSBURG, Md.,
		15 May 1940; 9:30 AM.

Maps: Gen Map, Gettysburg (1925), 1 inch=5 mi. U. S. Geol Surv Map, 1:62,500 Westminster quadrangle, with situation overlay herewith (Annex No. 1).

1. *a.* A hostile force, estimated to be a corps of two divisions and corps troops, is marching south in three columns on the general axis: CARLISLE (355-795)—BALTIMORE (gen map). Leading elements of this force bivouacked last night on the general line: EAST BERLIN (370-760)—HAMPTON (365-760)—BIGLERVILLE (345-760) (gen map). No hostile combat aviation has been reported.

b. The 1st Div (rein) will organize and defend the position shown in Annex No. 1. Formation: brigs abreast. Inf. and arty elements will be in position by 11:00 AM, 15 May. The present adv gd will outpost the position. The 1st Sq, 1st Cav, is in contact with the enemy.

No restrictions on reconnaissance.

The det, 1st Med Regt, now atchd to the adv gd, will be atchd to the outpost when march conditions cease.

Evacuation by Army, commencing 7:00 PM, 15 May. The 701st Surg Hosp (motorized) will arrive in WOOD-ENSBURG at 11:30 PM, 15 May.

2. This regt will support the div in the defense of the position.
3. *a.* The 1st Bn (less Co. B) will establish coll stas in support of the 1st and 2d Brig combat teams. It will establish liaison with the medical service of the outpost and be prepared to assist in the evacuation of the outpost.
- b.* The 3d Bn (less Co. G), committing only one company initially, will establish a clr sta at HAMPSTEAD (386-722) (Geol Surv map). See par. 4*a*.
- c.* The 2d Bn (less Co F) will evacuate the coll stas established by the 1st Bn. The CO, 2d Bn, will select the ambulance routes, and inform this CP of his selections without delay.
- d.* Co G, when notified of the opening of the new clr sta at HAMPSTEAD, will prepare to close the clr sta now operating at PIKESVILLE (395-690) (gen map).
- e.* The elements of Cos B and F, when relieved from attachment to the outpost, will proceed without delay to HAMPSTEAD and report to their respective companies.
- f.* Cos B and F (less elements atchd to the outpost) will proceed to HAMPSTEAD and there await orders in reserve, prepared to move on 15 minutes' notice. The movement to HAMPSTEAD will be directed by the CO, Co. F.
- x.* (1) The 2d Bn will transport all foot elements of the 1st Bn into positions.
- (2) All movements into positions will commence at 11:30 AM, 15 May.
- (3) All units will be in position with necessary stations established and ready to operate by 3:00 PM, 15 May.
- (4) Bn comdrs will report without delay the exact locations of their stations.
- (5) Parking of vehicles on the BALTIMORE AND HAN-OVER ROAD is prohibited.

(6) The use of the following roads by med vehicles is prohibited:

(a) Road: ALESIA (388-732)—MILLERS (386-730);

(b) Road: BECKLEYSVILLE (393-727)—ALBANTOWN (390-727); (all Geol Surv map).

4. a. The Hq and Serv Co, moving with the 3d Bn, will proceed to HAMPSTEAD and establish sta in the vicinity of the clr sta thereat.

b. Army medical depot: BALTIMORE.

c. Distribution of all classes of supplies: standing operating procedure.

5. CPs: 1st Med Regt: WOODENSBURG, closing 12:45 PM, 15 May.

HAMPSTEAD, opening 12:30 PM, 15 May.

1st Bn: Vicinity of GREENMOUNT (385-725) (Geol Surv map), to open not later than 1:30 PM, 15 May.

2d Bn: Vicinity of GREENMOUNT, to open not later than 1:30 PM, 15 May.

3d Bn: HAMPSTEAD, to open not later than 1:30 PM, 15 May.

OFFICIAL:

JOHN C. DOE,
Col, 1st Med Regt,
Commanding.

RICHARD C. ROE,
Capt, 1st Med Regt,
S-3.

Annex No. 1: Overlay of situation (omitted).

Distribution: A.

■ 2. SPOKEN FIELD ORDERS.—a. *Dictated field order.*—(1) *Situation.*—In compliance with Field Orders No. 45, 1st Medical Regiment (see par. 1, app. III), Company C has been directed by the battalion commander to support the 2d Brigade combat team with its collecting station located in the general vicinity of Alesia (388-732). The commanding officer of the

2d Battalion directed Company E to evacuate the collecting station(s) of Company C.

After arriving in Alesia with his company, completing his reconnaissance, and conferring with the commanding officer of Company E, the commanding officer of Company C assembles his platoon commanders and issues the following spoken field order:

(2) *Order.*—Follow me on your maps. We are now at the southwestern exit of the village of Alesia. That direction (pointing) is north. This street (pointing) runs almost due northeast. Note the high hills to the northeast; just beyond them lies the stream known as Gunpowder Falls.

Copy this order as I give it, placing as much of it on your maps as possible.

A hostile force, estimated to be a corps of two divisions with corps troops, is approaching this area from the north. No hostile combat aviation has been reported. It is estimated by the brigade staff that no attack can be made against this sector of our position before daylight tomorrow.

This division is organizing and will defend a position along the general line: Gunpowder Falls, Lineboro, Dug Hill Ridge. Formation: Brigades abreast, with the 2d Brigade on the right. The boundary between brigades is as follows: Western Maryland Railroad from Greenmount to Millers, thence the highway north through crossroads 792 to road junction 712, thence along the eastern slopes of the hills to Blackrock, and thence north along the stream to the vicinity of road junction 781—all to the 2d Brigade.

The position is outposted, and our cavalry is in contact with the enemy.

The 2d Brigade will defend its sector with regiments abreast, the 4th Infantry on the right. Boundary between regiments: the highway from Alesia to Roller and thence along Muddy Creek, all to the 3rd Infantry. The brigade is organizing and occupying that part of its sector from its left boundary to Roller; and is organizing an extension from Roller to Rockdale. After the organization of the extension is completed, the brigade reserve will be withdrawn into the valley along the railroad just southwest of where we are

standing (pointing). One battalion of the 4th Infantry is to go to division reserve at the same time.

Company E will evacuate our collecting station, and will also operate advanced ambulance shuttles.

This company will support the 2d Brigade combat team initially with one collecting station established in Alesia.

The 1st platoon will establish the collecting station in that church (pointing). Liaison agents will be dispatched at once to establish contact with aid stations. Liaison will be established at once with the medical service of the outpost.

The 2d platoon will evacuate the aid stations of the 3d Infantry and of the artillery located in its sector. The platoon commander will submit recommendations for advanced ambulance loading posts before 2:30 PM today.

The 3d platoon will remain in reserve initially, prepared to support elements of the 4th Infantry either in the occupation of the extension or in a counterattack. The platoon commander will submit recommendations for advanced ambulance loading posts in rear of the extension before 3:00 PM today.

The use of the road between Alesia and Millers, which is that road that you see there (pointing), and of the road between Beckleysville and Albantown, is prohibited.

The 1st and 3d platoons will mess at the collecting station. Hot food in containers will be delivered to ambulance loading posts for the 2d platoon.

The company CP will be at the collecting station.

Any questions?

It is now 1:10 PM.

Move out.

b. Oral field order.—(1) *Situation.*—Liaison agents have returned to the CP of Company C with the exact locations of all aid stations established in the brigade sector. The commanding officer of the 2d Platoon of Company C, accompanied by the junior officer of Company E, has reconnoitered all roads in the immediate rear of the position, obtained the information secured by liaison agents, and made his recommendations for the locations of advanced ambulance loading posts. These recommendations have been approved.

He then assembles the section leaders of the 2d Platoon and issues the following oral order:

(2) *Order.*—I have prepared these road sketches of this area (issues road sketches to section leaders). We are in Alesia. At that end of this street (pointing), the road to the right leads to Roller and you can see it as it winds around that nose (pointing). On this road about 300 yards from town is a crossroads. At this crossroads the road to the left leads down the valley, parallel to the railroad. About a mile northeast of the crossroads this road crosses the railroad and shortly afterward crosses a small stream. Find that place on your sketches and mark it as the aid station of the 3d Battalion of the 3d Infantry.

At the other end of this street (pointing), the road to the right runs immediately in rear of the position of the 3d Infantry, on the average about 1,500 yards in rear of the main line of resistance and, at several points, it crosses the regimental reserve line. Just on top of that hill (pointing) there is a road junction where a road leads to the left, or southwest. About 500 yards down this road to the left, at the head of a draw, is the aid station of the 2d Battalion of the 3d Infantry. Mark that point on your sketches.

Now, coming back to this main road out of Alesia that you see there (pointing), after it crosses that hill (pointing) it dips down into a narrow valley and crosses a small stream. This stream crossing is about a mile and a half from Alesia. Downstream about 300 yards from the point where the road crosses there is a stream junction. The aid station of the 1st Battalion of the 3d Infantry is located at that stream junction. Mark that on your sketches.

There has been no change in the situation since I explained it to you earlier in the afternoon.

One section of ambulances of E company has been detailed to operate advanced ambulance shuttles in the sector of the 3d Infantry. That is the section, parked right across the street (pointing). The ambulance commander has assigned the leading three ambulances to the left shuttle and the rear two to the right shuttle. Liaison agents will accompany the litter bearer sections and guide them to aid stations.

I shall take the first section and establish loading posts for the aid stations of the 1st and 2d Battalions of the 3d Infantry. The first section will entruck in the three leading ambulances.

The second section, less one corporal and three litter squads, will entruck in the two rear ambulances and proceed on the road leading down the valley there (pointing) to the aid station of the 3d Battalion of the 3d Infantry. This section will establish and operate an ambulance loading post as near to this aid station as is practicable.

The three litter squads withdrawn from the 2d section, commanded by the corporal, will remain here at the collecting station awaiting orders.

Cooked food will be delivered at all ambulance loading posts.

Send all messages for me to the collecting station.

Any questions?

It is now 2:45 PM.

Entruck your sections.

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